



John Reeves
(1774-1856)

Oils, ? by G. Chinnery

John Russell Reeves
(1804-77)



Pencil, G. Chinnery, 1838

THE REEVES COLLECTION
OF
CHINESE FISH DRAWINGS



BY

P. J. P. WHITEHEAD

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INTRODUCTION

AMONG the many original water-colour and pencil drawings in the Zoological Library of the British Museum (Natural History) is a collection of nearly five hundred water-colours of fishes by Chinese artists, dating from 1828-30. This is the Reeves Collection, of which the library has two further hand-made copies. Only a few of the Reeves drawings of fishes have ever been reproduced, and apparently never in colour, but they hold great importance to ichthyology because of their use, not only in colour descriptions of known species, but also as the basis for descriptions of new species. No less than eighty-three drawings have been used as the *sole* basis for species descriptions, and these drawings must be considered iconotypes.

All the iconotypes are reproduced here (twenty in colour) except for nine already published (see list, p. 204) and two that could not be located (No. 27 and No. 274 as listed here). The drawings were examined by many leading ichthyologists of the last century, but were principally used by Sir John Richardson in his work on Chinese and Japanese fishes. Günther distrusted drawings as the basis for description, listing many of Richardson's new species as doubtful, but too many nomenclatural problems exist for the Reeves drawings to be ignored.

The Reeves fish drawings represent only a portion of the work commissioned by this energetic man, for there are also volumes on plants, insects, birds, mammals, crustaceans and molluscs, mostly in the British Museum (Natural History). For conceiving this huge enterprise, and for the evident labour required to supervise it and to maintain such a high standard, John Reeves deserves great credit. Although he lived at a time when such projects were not uncommon, the Reeves Collection of drawings must rank among the best of that age, both for accuracy and artistic merit, as well as for sheer quantity.

JOHN REEVES AND HIS SON J. R. REEVES

During the late eighteenth and early nineteenth centuries, when a knowledge of natural history was considered part of a liberal education, many enthusiastic Englishmen made collections and supervised drawings of the animals and plants seen during voyages or in the course of their employment in India or the Far East. The Honourable East India Company, realizing that more exact botanical knowledge could bring economic returns, began at the turn of the century actively to support such studies. As early as 1803 the Company asked its Factory at Canton for Chinese pictures of plants and miscellaneous subjects (Archer, 1962). Thus, when John Reeves arrived in Canton as Assistant Tea Inspector in 1812, there was already something of a tradition encouraged by the Company itself.

John Reeves (1774–1856) became one of the foremost collectors of natural history specimens in southern China in the early nineteenth century and was mourned as “among the Nestors of Horticulture” in an obituary notice (*Gardener's Chronicle*, 1856 : 212). His contributions to English horticulture, and to the Horticultural Society of London in particular, were indeed immense. Through him came the first shipments of Chinese azaleas, camellias, paeonies, chrysanthemums and roses, as well as hundreds of dried plant specimens and paintings of Chinese plants. Not a Company's ship at that time sailed for Europe without her decks being decorated with little portable greenhouses containing new horticultural treasures. The collection of Chinese animal paintings compiled by John Reeves was yet another notable contribution to knowledge of the natural history of China.

He was the youngest son of the Rev. Jonathan Reeves of West Ham. Left an orphan at an early age, he received his education at Christ's Hospital and afterwards entered the counting house of a tea broker. By 1808 he had acquired such a thorough knowledge of teas that he was recommended to the office of Inspector of Tea in England for the Honourable East India Company. In 1812 he was sent out to China as Assistant and later Chief Inspector of Tea at Canton. He worked in Canton during the tea season, but at other times resided at Macao. His duties do not appear to have been very arduous and he seems to have been able to devote much of his time to the investigation of many aspects of Chinese culture and natural history. He returned finally to England in 1831, having served three tours in China (of about five years each), broken by two periods of leave (1816–? and 1824–6). His first impressions of China do not seem to have been very favourable (*... we have been disputing for months past with the villainous Government of this vile Country ...* he wrote to his sister in 1814), but this did not last and one is impressed with his evident enthusiasm for everything Chinese. Through his son (see below) he maintained close links with China after his retirement. With the signing of the Treaty of Nanking, the ports of Canton, Amoy, Foochow, Ningpo and Shanghai were thrown open to foreign trade and residence. Eager to take advantage of the opportunities this afforded, Reeves formed a Chinese Committee on whose recommendation the Royal Horticultural Society sent the outstanding plant collector Robert Fortune to China in 1843. An account of the great contributions that Reeves made to horticulture and some short notes on his life were given by Bretschneider (1898 : 256–

263), derived principally from the *Chinese Repository* and from obituary notices in the *Gardener's Chronicle* (1856) and the *J. Linn. Soc. London* (1856 : xliii).

One of Reeves' correspondents was Sir Joseph Banks, and he seems to have shared with Banks an avid curiosity about everything he encountered. There are twelve letters (1812-21, the final ones written after Banks' death) written to Banks in the list compiled by Dawson (1958) and they deal with such topics as a method for making sheet lead into thin leaves, the composition of Chinese ink, a Chinese preparation for the treatment and preservation of fishing nets, the technique for staining horn for coloured lamps, inlaid lacquer-making methods, and so on, together with notes on plants. To Lady Banks he sent packages of tea, and to Sir Joseph plants and such curiosities as an edible bird's nest (on the composition of which he had definite views—see below, p. 201).

Reeves' publications include a short paper on the *materia medica* employed by the Chinese (*Trans. Med. Bot. Soc.*, 1828 : 24-27), and his compilations and Chinese names for stars and plants published by John Williams in Robert Morrison's *Dictionary* (parts 2 and 3).^{*} His descriptions of a comet observed in May 1820 appeared in the *Indo-Chinese Gleaner* (1820 : 436) under the name of Collas. He seems to have been a competent naturalist, but made no collections for himself and let others publish his findings. Tribute to him and to his son was paid by botanists and zoologists in the naming of new genera and species. The name *reevesii* was bestowed twenty-seven times on species of mammals, reptiles, birds, molluscs and fishes (eight fishes, named by Richardson, Gray and Valenciennes). In 1817 Reeves became a Fellow of the Royal Society and of the Linnean Society and he must have been in close touch with leading naturalists of the day.

Reeves' notebooks (see below, p. 199) give no date earlier than 1828 for his interest in fishes, but in June that year he had already begun commissioning fish drawings and he may have collected specimens prior to this. One list of fishes (notebooks pp. 29-32) is on paper watermarked 1826. There is no reference to fishes in his letters to Banks. It would seem that fishes occupied his interest during his third and final tour of service and that he probably brought drawings and specimens back with him on his retirement in 1831.

John Reeves' first wife Sarah (*née* Russell) died in 1810 and when Reeves went to China two years later he left his four children in the charge of his sister Rachel. In 1816 he married Isabella Andrew, presumably during his first period of leave, but the children appear to have stayed in England. Thus the eldest son, John Russell Reeves (1804-77), did not join his father in Canton until he was 23. The career of J. R. Reeves was surprisingly similar to that of his father. He joined the East India Company and in 1827 took up the appointment of Assistant Inspector of Teas in Canton. On this first trip to China he kept a diary which shows a lively interest in the birds and fishes observed during the long voyage. Like his father, J. R. Reeves collected plants for herbarium purposes as well as for introduction to English gardens. He also collected fish specimens and these, like his father's, are now in the

^{*} Dr. Morrison was one of the few Englishmen in China at that time who had thoroughly mastered Chinese. A portrait of him by George Chinnery shows Morrison with two Chinese assistants translating the Bible.

British Museum (Natural History). In 1839 he married his first cousin Elizabeth Conway* and on his retirement he returned to England and lived at Wimbledon until his death in 1877.

The British Museum received two sets of Reeves fish drawings, presented by the widow of J. R. Reeves in 1877, of which one set was later given to the Zoological Society of London. Two further sets came to the British Museum, one from Major-General Hardwicke (1835) and one from Sir John Richardson (1860). In addition to these, the British Museum also received (in 1877) five further zoological volumes, containing drawings of mammals, birds, reptiles (including some crustaceans, insects and amphibia), molluscs and crustaceans, and insects, the birds and insects predominating. There are probably over a thousand drawings in these five volumes, all showing the same delicacy and accuracy evident in the fish drawings. The library catalogue gives a total of 481 animal drawings received at this time, that is to say *folios*, since there were 481 drawings of fishes alone (including duplicates).

The British Museum also received in 1877 some 911 Reeves drawings of plants from J. R. Reeves' widow. According to Syngé (1953), John Lindley commissioned botanical drawings from Reeves for the Royal Horticultural Society, but these drawings were dispersed when the Society's library was sold in 1858. Reginald Cory bought five volumes (628 sheets) in 1908 and in 1936 presented them to the Horticultural Society once more. Then in 1953 a further three volumes of drawings were offered for sale by a London bookseller and these were bought by the Society (mainly depicting chrysanthemums, camellias and paeonies).

John Reeves not only commissioned drawings but collected those which were currently produced by Chinese artists for Europeans. These "stock" pictures of natural history subjects, which are often highly finished and perhaps more satisfying aesthetically than the true "Reeves" pictures, must have been made from a master copy. For example, there is a drawing of a water melon in the Reeves Collection which exactly matches one in the India Office Library (Cat. No. NHD.42). But this drawing could not have been commissioned by Reeves since it was in the India Office before Reeves went to China (Archer, 1962 : 100 and pl. 12). Many of the insect and bird drawings now bound with the Reeves Collection in the Zoological Library of the British Museum (Natural History) are clearly "stock" pictures.

The mammal volume in the Zoological Library contains a mezzotint entitled "John Reeves" which has been bound in as the first page. The portrait was painted and engraved by T. Hardy and was "respectfully inscribed to the Committees of Associations, at the Crown & Anchor & the St. Albans Taverns & other Loyal Constitutional Associations in Great Brittain (sic) . . ." by the artist.† The subject of this portrait, however, is another John Reeves (1752-1829), a cousin of the first and a lawyer who rose to be Chief Justice of Newfoundland. Portraits of

* A sketch book, in the possession of the Goodman family, contains some exquisite flower paintings signed by Elizabeth Conway (in 1824); these were clearly inspired by the Chinese paintings in the collection of her future father-in-law, seen during the latter's second leave.

† A sheaf of papers within the picture proclaims "*Associations for preserving Liberty & Property against Republicans and Levelers*. Nov. 20th, 1792". Clearly the sitter was no Radical but a firm supporter of Mr. Pitt and the Establishment! Bitterly opposed to Reeves and his reactionary associations were my own forbears, the Rathbones of Liverpool.

John Reeves of Canton are now in the possession of the Goodman family. They include some photographs, two miniatures and two portraits in oils, of which the latter are almost certainly by Chinnery* (one reproduced here—frontispiece). There are also photographs of J. R. Reeves and a Chinnery portrait sketch in pencil (see frontispiece).

Unless otherwise stated, details of the Reeves family have been drawn from documents, letters, etc. belonging to the Goodman family (see Acknowledgements).

THE FOUR SETS OF REEVES FISH DRAWINGS

According to Richardson (1846 : 188), there were four sets of Reeves fish drawings made. Three of these are now in the Zoological Library of the British Museum (Natural History)—the Reeves, Hardwicke and Richardson sets—and the fourth set, formerly believed lost, is in the library of the Zoological Society of London. The drawings vary somewhat between the sets, both in colour intensity and type of paper used, but the Richardson set must be regarded as the definitive one for systematic purposes because it was the one used by Richardson for his descriptions (except for one or two drawings only found in the Reeves set). The copies may not necessarily have been executed at the same time as the originals.

The Reeves set

A bound volume, $23\frac{1}{2} \times 19\frac{1}{2}$ inches, contains 481 figures (124 folios) of fishes. Against each drawing is a number (red ink, occasionally black or pencil), the numbers running consecutively on each page, but the pages rearranged. These are the Reeves numbers cited by Richardson in his Report and they correspond with the numbers in Reeves' notebooks (see below, p. 199). The drawings also bear the Chinese vernacular name in Chinese script, but there are no Latin names. The drawings are sometimes repeated on another page, and occasionally a whole page is duplicated, either wholly (pp. 2 and 3, pp. 53 and 54) or in part (p. 6 repeats pp. 2 and 3 except for fish at bottom of page). Most of the drawings are on sheets of paper watermarked either J. Whatman 1825 (pp. 93, 96, 102, 108, etc.) or J. Whatman Turkey Mill 1829 (pp. 88, 101, 103, 104, 109, etc.). There are, however, drawings on slightly smaller paper ($19\frac{1}{2} \times 15$ inches) which is water-marked J. Whatman 1824 (p. 40 only) or 1826 (pp. 2, 6, 12, 13, 18, 20, etc.). These match those contained in the fourth set (see below). Finally, there are twenty-one drawings differing stylistically from the others (outlines softer, colours muted) which are water-marked J. Whatman 1805 (pp. 42, 43, 44, 66, 67, 75, 76, 82, 105–107). Four of these have a heraldic griffin stamped in black at one corner, a device which appears on other drawings, however, occasionally surmounting a shield; this is the Reeves crest. These are clearly drawings collected by Reeves, but not part of the main series.

The drawings were presented to the British Museum by Elizabeth Reeves, widow of J. R. Reeves, on her husband's death in 1877. There is a list of these drawings prepared by Günther, which gives page references to Günther's Catalogue and Richardson's Report; 286 species are included.

* John Reeves was a personal friend of the artist George Chinnery, who lived in Macao from 1825 until his death in 1852.

Hardwicke set

Four bound folio volumes amongst the Hardwicke collection of drawings in the Zoological Library of the British Museum (Natural History) contain Reeves fish drawings (representing 328 species according to Richardson). The drawings have been cut from their original pages and remounted in systematic order, with other (*non-Reeves*) drawings interpolated. Each drawing is numbered (1-165, 166-313 in vol. 20a and b; 1-174, 175-317 in vol. 21a and b), many still bear the Reeves number (red ink) and Chinese ideogram, and all the Reeves drawings are named and have a page reference to Richardson's Report. Earlier identifications of the Hardwicke fish drawings, as well as notes by Hardwicke himself, are often pencilled against the drawings.

Major-General Hardwicke (1756-1835) began his collection of illustrations of Asiatic zoology at the end of the eighteenth century and continued until his return to England in 1823. In 1830-35, J. E. Gray named 200 of the Hardwicke illustrations of Indian animals and these were published as *Illustrations of Indian Zoology*. The Reeves notebooks (see below) list forty-six sheets (194 drawings of Chinese fishes) sent home to General Hardwicke in 1829-30, and Hardwicke may perhaps have intended that these too should be published. He did, indeed, bequeath these and his other drawings (as well as specimens) to the British Museum, together with a sum of money to defray the expense of publishing the scientific description of them, but the latter scheme was abandoned because of a Chancery suit instituted soon after his death (Dawson, 1958).

Hardwicke's books, drawings and specimens came to the British Museum in about July, 1835, and it was his set of Reeves drawings that was consulted by visiting ichthyologists until the Richardson set came to the British Museum, twenty-five years later.

Richardson set

Sir John Richardson (1787-1865) was lent a set of Reeves fish drawings and these are now contained in a bound volume. On the fly-sheet is inscribed "Sir John Richardson's set of drawings of Chinese fish by native artists (one of four) prepared under the supervision of J. Reeves (used by Richardson for his 'Report')". The "Report" (hereafter referred to merely as the Report) is Richardson's *Ichthyology of the seas of China and Japan*, delivered as a report to the British Association in 1845 and published in 1846.

The drawings have been cut from their original sheets and remounted in the systematic order used in the Report. Each drawing is named and a page reference to the Report is given; the Reeves numbers (in red ink) and the Chinese ideograms match those on the other sets. The Richardson volume contains 146 folio pages and about 350 drawings.

The Richardson set was given to Günther in 1860 for the preparation of his catalogue of fishes (see below, p. 200).

The "Fourth" set

In the Report (p. 188) Richardson stated that "Mr. Reeves had four copies of these drawings made". Richardson then mentioned the Hardwicke set, his own set and another copy "left by Mr. Reeves at Macao with Mr. Beale [which] formed the groundwork of the enumeration of Chinese fish in Bridgeman's 'Chrestomathy' ..."

Richardson gives no details of another set, but it must be presumed to be the present Reeves set, retained by John Reeves, passed to his son and presented to the British Museum in 1877. Thus the fourth set must have been the one left in Macao.

It was reported previously (Whitehead, 1966) that the fourth set was not in the British Museum, the British Museum (Natural History) nor in the library of the India Office, and might be in private hands. Recently, however, a letter has been found from Elizabeth Reeves to Dr. Günther, dated 4th July, 1877, in which she states "I beg to say that I shall be greatly obliged if you will forward the Duplicate Drawings to the Zoological Society as you kindly propose, only I should wish you to send them in the name of my late husband* John Russell Reeves." (letter in Zoology Department of the British Museum (Natural History)).

In the library of the Zoological Society of London is a bound volume of Reeves drawings, including fishes, and this is undoubtedly the fourth set. It contains drawings of mammals (pp. 1-8), birds (pp. 9-38), reptiles (pp. 39-49), fishes (pp. 50-122) and crustaceans (pp. 123-129, including a fish, an octopus and a cuttlefish). There are up to five fishes on each page, in most cases matching the arrangement on the pages of the Reeves set.

The drawings are on smaller sheets of paper ($19\frac{1}{2} \times 15$ inches) than in the Reeves set, but match the few smaller ones in that set. On twenty-seven pages the date and the drawing number have been written on the reverse of the page. The dates and the numbers show that these paintings at least were those executed by Asung at Macao between March and September, 1829, as stated in the notebooks (see below, p. 200).

This set of drawings is acknowledged in the Report of the Council of the Zoological Society for 1877 (p. 13, A collection of 125 sheets of duplicates of original drawings of animals in the collection of the late John Russell Reeves, Esq., F.R.S., F.Z.S. Presented by Mrs. Reeves). It would appear that it came first to the British Museum, probably together with the present Reeves set, and in sorting out the duplicates Günther to some extent mixed the two sets, so that the Reeves set now contains some smaller drawings dated on the back, i.e. characteristic of the fourth set. This would explain why not all of the fourth set pages are dated; it also suggests that there was indeed a "master" set from which the others were copied, although it is not possible to say which that was.

JOHN REEVES' NOTEBOOKS

There are two bound volumes in the Zoological Library of the British Museum (Natural History) which contain MS. lists of drawings, notes, etc. made by John

* Elizabeth Reeves has hitherto been cited as the sister of J. R. Reeves in British Museum records of the drawings.

Reeves in 1828-30. The second volume contains merely an original listing, of which there is a fair copy in the first volume. The notes were probably bound up in about 1846, but appear to have been received by the British Museum together with the Hardwicke drawings (i.e. 1835). There is an index of the notes, in Reeves' hand, evidently added later, perhaps at the time of binding. The notes add a certain amount of background to the compilation of the drawings.

Dates, localities, artists

- | | |
|---------------------|---|
| Nos. α 1-54: | at Macao ?, by Akut, 5th June to 22nd July, 1828. |
| Nos. β 1-103: | at Macao, 84-95 + 103 (? all) by Akew, 1828. |
| Nos. 104-158: | at Canton, artist not known (? Akam), Oct. to Nov., 1828. |
| Nos. 159-279: | at Macao, by Asung, 5th March to 9th September, 1829. |
| Nos. 280-284: | at Macao, by Asung, August, 1830. |

Artists

Four artists are mentioned by name, Akut, Akam, Akew and Asung. Their names often appear in pencil against lists of drawings with the amount paid to them and the number of drawings done. Reeves seems to have paid one dollar for three drawings, but it is not clear if this included the three copies of each drawing or merely the original. According to the data given above, Akut did fifty-four drawings in forty-eight days, and Asung 120 drawings in 149 days, or about one drawing a day. It seems reasonable to suppose that the artist did the three copies at the same time as the original.

Hardwicke set

A list is given of forty-six sheets, containing 194 drawings of fishes, sent to General Hardwicke in 1829-30. Reeves must have sent other drawings to Hardwicke since the Hardwicke set contains over three hundred species of Chinese fishes.

Richardson set

There is a note, in Günther's hand, on the first page of the notebook stating "Duplicate series of Reeves drawings of Chinese Fish used by Sir J. Richardson for his B.A. Report, and transferred by him to Dr. G. in 1860 for the preparation of Catal. Fish.

Note: these are duplicates of those in bound volume that accompanies Hardwicke collection".

Gray

A list of fishes on pp. 34-35 of the first notebook includes names stated to have been supplied by J. E. Gray. If these notebooks came either to Gray or to Hardwicke, it is likely that some of the pencilled names on the Hardwicke set are by Gray. Thus, Gray probably used the drawings in the MS. list of fishes alluded to by Richardson (see below, p. 201).

Specimens

On pp. 29–32 is a list of fishes taken in the neighbourhood of Macao. The list is undated, but the paper is water-marked 1826. These may be the specimens subsequently sent to the British Museum. In the Report, Richardson sometimes identified a specimen as model for a drawing, but only because the sizes match.

Crustacea

The notes refer to drawings of crabs and shrimps, of which there is a bound volume of drawings in the Zoological Library of the British Museum (Natural History).

Chinese names

There is a list (pp. 73–84) of Chinese ideograms with their English rendering and translation by J. R. Morrison, who also included notes on the fishes.

Miscellaneous

On p. 68 Reeves criticized the assertion of Desfontaines and Valenciennes that the nests of *Hirundo esculenta* (the edible nest swallow) are made from the branches of a certain *Fucus*. "Tis curious" he writes, "that neither of these gentlemen should have discovered that the nest when burnt has the empyreumatic smell of *animal* matter which is not the case of any *Fucus* here. I have tried the *Fucus* of which we make our *Jellies* here—which has no bad smell when burnt—the Birds Nests have a decidedly *animal* smell".

Other notes refer to plants, and they appear to be short memoranda which he probably wrote up more fully elsewhere.

USE MADE OF THE REEVES FISH DRAWINGS

The Reeves drawings were first used by J. E. Gray, later Keeper of the Zoological Department of the British Museum, who examined the set that Hardwicke later bequeathed to the Museum (1835). According to Richardson (Report: 193, 291), Gray had commenced an analysis of these drawings, and Richardson gives the authority for nine species (*Upeneus biaculeatus*, *Cyprinus? fossicola*, *Cyprinus carassoides*, *Leuciscus nobilis*, *Leuciscus acutus*, *Leuciscus plenus*, *Ilisha abnormis*, *Chatoessus maculatus* and *Congrus fasciatus*) as "Gray, Cat. Brit. Mus." No such catalogue was ever published;* it was probably a manuscript (now lost) and would have formed a continuation from his list of cartilaginous fishes, which was not published until five years after Richardson's "Report" (Gray, 1851). Thus, the nine species must be attributed to Richardson. In three cases there were Reeves specimens, usually with a drawing, but the remainder were based solely on a drawing.

Gray (1831) had earlier published a description of three new fishes based on Reeves specimens, but with no mention of drawings (*Leucosoma reevesii*, *Samaris cristatus* and *Cestracion zebra*), and this appears to be the first indication of Reeves fishes reaching the British Museum. According to the Reeves notebooks (see

* The 1162 papers written by J. E. Gray (some not published) were listed by him and the list, with a brief foreword by J. Saunders, was printed for private circulation and issued by Mrs. Gray after his death in 1875.

above, p. 200), Reeves sent a set of drawings to General Hardwicke in 1829–30. Gray lived quite close to Hardwicke (Dawson, 1946), and since he was at that time (1830–35) preparing Hardwicke's collection of drawings of Indian animals for publication, he probably saw the Reeves drawings shortly after they arrived in England, and may have supervised their arrangement. In the notebooks (see above, p. 200) there is a list of fish names and drawing numbers, and it is stated that the names were given by Gray.

Gray's vast output of papers, which covered almost all groups of animals, indicates an energy and enthusiasm which must inevitably have led to the shelving of some projects while new ones were seized upon. This is borne out in his correspondence (General Library, British Museum (Natural History)), where Hardwicke seriously considers William Swainson for the continuation of the series on Indian Zoology, or where Edward Rüppell almost despairs of any co-operation from Gray after a most cordial beginning to their exchange of specimens and books. One can surmise, therefore, that the Reeves drawings and specimens were yet another of the projects that Gray began but had to lay aside.

After Gray, the next ichthyologists to use the Reeves drawings were Johannes Müller (1801–58) and Friedrich Henle (1807–85). The MS. Reports of the Zoological Society of London record that Müller examined the Society's collection of cartilaginous fishes on the 7th to 20th September, 1837. Müller & Henle (1841) cite Reeves drawings for seven species (*Chiloscyllium plagiosum*, *Sphyrna zygaena*, *Platyrrhina sinensis*, *Trygon uarnak*, *Pteroplatea micrura*, *Myliobates nieuhofii* and *M. maculatus*) and for these they quote the figure numbers of the Hardwicke set. None of the Müller & Henle figures, however, was taken from a Reeves drawing.

Richardson (Report: 188) stated that a number of leading ichthyologists had examined the Reeves drawings. Cuvier was in London in May, 1818 (letter from Sir Joseph Banks to Sir Charles Blagden—see Dawson, 1958), but visited again in August, 1830 (Atkins, 1853: 250) when the drawings were with Hardwicke; possibly he saw them. It would seem that Valenciennes just missed them, having visited London in late February, 1829 (letter to Gray, now in Zoology Department, British Museum (Natural History)); Hardwicke had probably not yet received his set of drawings by then (sent by Reeves in 1829–30 according to the notebooks). Valenciennes did see other Chinese drawings of fishes at the British Museum but these were not part of the Reeves collection (note by Richardson in the Report: 287).

The Reeves drawings were most fully used by Richardson. In his *Report on the Ichthyology of the Seas of China and Japan* (1846) he listed 671 species or varieties of fishes and identified 332 of them with a Reeves illustration (plus twelve duplicates). Richardson described 152 species or varieties as new, and based seventy-seven of these solely on a Reeves drawing, and forty-one on a drawing and on a specimen or previous description. His colour descriptions, often of prime importance in the diagnosis of the species, were almost all derived from the Reeves drawings. In fact, Richardson claimed that "These drawings are executed with a correctness and finish which will be sought for in vain in the older works on ichthyology, and which are not surpassed in the plates of any large European work of the present day." The claim is justified, in many cases even today.

In his *Zoology of the Voyage of H.M.S. Sulphur* (1844-45—hereafter referred to as *Sulphur*), Richardson based six new species solely on Reeves drawings, and nineteen species on drawings and specimens. In this work he illustrated eight species with a figure taken from a Reeves drawing (see list, p. 204).

Richardson's Report is a mine of incidental information, with many scattered references that are of value in problems of dating, location of specimens, etc. Unfortunately, the 600 species are listed in what is now an unfamiliar arrangement of orders and families, and there is no index. To overcome this difficulty, an index to the Report is given at the end of the present paper in which both the page number of the Report and the Reeves drawing numbers are cited.

An interesting source for some of Richardson's descriptions in the Report is a work cited (Report: 188) as "'Descriptions of Animals', being an account, in the Linnaean method, of the various species, both terrestrial and marine, observed in a voyage to India and China, with pen and ink figures of small size, but well-executed. The author is unknown." This is an unpublished work listed as part of Banks' library by Dryander (1796, vol. 2 : 20), having come from the library of John Fothergill (1712-80). This work is in the Zoological Library of the British Museum (Natural History). The first volume (Banksian MS. 84, 181 folios) contains descriptions of animals (mammals, birds, reptiles, amphibians, fishes, molluscs, crustaceans) and the second (MS. 85, 79 folios) contains small pen and ink drawings. Richardson used this work as the basis for some of his species (*Polyacanthus* ? *paludosus*, *Leuciscus plenus* and *Gobioides melanurus* for example). For the last of these species Richardson states (Report: 206) "The name of *Gobius melanurus* was written by Broussonet himself over the figure, and he mentions the species by the same appellation in his first decade" (i.e. his *Ichthyologia* of 1782, in which he refers to the MS). The manuscript, which is written in English, often gives only a generic name and in many cases a species name has been added in pencil, presumably by Broussonet. The latter spent two years in England (1780-82 *fide* Carter, 1964 : 47) working closely with Joseph Banks and having access to his library and collections as well as to those at the British Museum.*

The authorship of the manuscript was unknown to Dryander (1796 : 120), Banks' second librarian, and presumably also to Fothergill. The use of English in the descriptions is unusual for this period and suggests a keen but untrained naturalist, possibly a man like J. R. Reeves, anxious to while away his time during the long voyage to Canton.

REEVES FISH DRAWINGS ALREADY PUBLISHED

The following thirty-eight Reeves drawings have been published as half-tone illustrations, either from photographs or redrawn from the originals. Species based solely on a Reeves drawing are shown in bold-face italic.

* Broussonet made two further visits to England, the first in about March, 1786 and the second in June, 1803; the first visit resulted in a short paper on a sailfish brought back from the third Cook voyage (Broussonet, 1786) but thereafter Broussonet's interest in ichthyology gave way to his commitments to rural economy and agriculture (Carter, 1964).

Richardson (in Sulphur)

- Pl. 36 (4) *Callionymus reevesii* from Reeves 180.
- Pl. 39 (4) *Pelor cuvieri* from Reeves 164.
- Pl. 49 (2) *Muraena reevesii* from Reeves 68.
- Pl. 51 (1) *Anguilla avisotis* from Reeves 222.
- Pl. 52 (7) *Monopterus* (or *Synbranchus*) *xanthognathus* from Reeves 221.
- Pl. 60 (2) *Balistes hihpe* from Reeves α 35.
- Pl. 61 (2) *Tetrodon laterna* from Reeves 99.
- Pl. 62 (1) *Balistes frenatus* from Reeves (229).

Mees (1962)

- Pl. 1 (1, 2) *Beloné ciconia* from Reeves (both Reeves and Richardson versions shown).

Trewavas & Yazdani (1966)

- Pl. 6A *Otolithus aureus* from Reeves 234.

Whitehead (1966)

- Pl. 1 (2) *Clupea isingleena* from Reeves 60.
- Pl. 1 (3) *Clupea nymphaea* from Reeves β 25 (also reproduced by Chan 1965 : fig. 11).
- Pl. 2 (1) *Clupea caeruleo-vittata* from Reeves 59.
- Pl. 2 (2) *Clupea flos-maris* from Reeves 64.
- Pl. 2 (3) *Alosa reevesii* from Reeves α 8.
- Pl. 3 (1) *Alosa palasah* from Reeves β 57.
- Pl. 3 (2, 3) *Ilisha abnormis* from Reeves 81 and 67.
- Pl. 4 (1) *Chatoessus aquosus* from Reeves 63.
- Pl. 4 (2) *Chatoessus triza* from Reeves 224.
- Pl. 4 (3) *Chatoessus chrysopterus* from Reeves 61.
- Pl. 5 (1) *Chatoessus maculatus* from Reeves 109 (also pl. 1 (i) in Whitehead & Joysey, 1967).
- Pl. 5 (2) *Coilia grayii* from Reeves α 14.
- Pl. 5 (3) *Coilia playfairii* from Reeves β 26.
- Pl. 6 (1) *Thryssa mystax* from Reeves 138.
- Pl. 6 (2) *Megalops setipinnis* from Reeves 96.
- Pl. 6 (3) *Megalops curtifilis* from Reeves 136.
- Pl. 7 (1) *Elops machnata* from Reeves 137.
- Pl. 7 (2) *Elops purpurescens* from Reeves 53.
- Pl. 7 (3) *Chirocentrus dorab* from Reeves 47.

Whitehead & Joysey (1967)

- Pl. 1 (2) *Caranx cancroides* from Reeves β 30.
- Pl. 1 (3) *Trachinotus melo* from Reeves 97.
- Pl. 1 (4) *Solea ommatura* from Reeves β 13.

- Pl. 2 (1) *Serranus shihpan* from Reeves 71.
- Pl. 2 (2) *Priacanthus tayenus* from Reeves β 14.
- Pl. 2 (3) *Sebastes vachellii* from Reeves 69.
- Pl. 3 (1) *Pelor tigrinum* from Reeves β 42.
- Pl. 3 (2) *Apocryptes serperaster* from Reeves β 55.
- Pl. 3 (3) *Gobius platycephalus* from Reeves 194.
- Pl. 3 (4) *Julis exornatus* from Reeves β 10.

TYPE SPECIMENS

Nearly two hundred new species, subspecies or varieties were described by Richardson in the Report, Sulphur, Erebus & Terror and *Ann. Mag. nat. Hist.*, of which eighty-three species were based solely on a Reeves drawing; sixty-six species were based on a drawing and specimens or a previous description; and the remainder were based on specimens alone. In the list of Reeves drawings given here, reference is made to extant type specimens. Specimens have been found for thirty-three of the species listed, but for twenty-eight species the material appears to be lost or in some cases is known to have been destroyed. Most of the specimens come from either John or J. R. Reeves, but some were derived from the Vachell and other collections.

Reeves

Since Gray published on John Reeves' fish specimens in 1831 (see above, p. 201), it seems probable that Reeves brought these specimens back with him on his retirement in that year. The present system of registration of fishes, which gives the date of incorporation (year, day, month, specimen number), was not begun by Gray until 1837, so that none of the Reeves fishes was registered at the time. Gray most probably had a list, but this has not survived.*

J. R. Reeves also sent specimens to the British Museum. One can usually distinguish between specimens from the two Reeves, the John Reeves specimens being marked "Reeves" or "John Reeves", while those collected by his son are labelled "J. R. Reeves". The total number of Reeves specimens is difficult to estimate because Richardson often refers to "Brit. Mus. Spec." from Canton, and such specimens might have been sent by other collectors.

The Reeves specimens are either preserved in alcohol or are dried, often mounted. The mounted specimens appear to have been used for display and the wooden base is often (but not invariably) inscribed with Reeves' name and locality.

Vachell

The Rev. George Vachell, Chaplain to the Factory of the East India Company at Macao in about 1830, made a collection of about a hundred fishes which he presented to the Cambridge Philosophical Institution. Richardson examined these specimens and used them as the basis for descriptions of twenty-two new species. The fate of

* Günther, in his Catalogue of Fishes in the British Museum (1859-70), seems to have had access to such a list since he records material from the Cook voyages (1768-80) for which there is often no evidence on the labels of the jars or on the specimens; many of these are stated to derive from the 'Old Collection'.

the Vachell collection, of which only fifteen specimens now survive, was examined by Whitehead & Joysey (1967).

Chinese collections at Hyde Park

Richardson (Report: 189) listed various other sources of material—Haslar Hospital, Royal College of Surgeons, India House—but then stated that “An assemblage of Chinese fish, exceeding all these in number, exists in the Chinese collection, made by Mr. Dunn, and now exhibiting at Hyde Park. The proprietor most liberally permitted me to examine this important collection; but owing to my residence at a distance from London, and the way in which the bottles holding the fish are secured in screwed up cases, I have not been able to avail myself of this permission to the necessary extent for the identification of known species or the description of new ones”. Nevertheless, Richardson mentions the Hyde Park collection frequently in his notes on new or described species. It can, however, be accepted that no type material is attributable to this collection (see for example Sulphur: 109).

The Chinese collection was exhibited at St. George's Place, Hyde Park Corner by an American, Mr. Nathan Dunn, from 1842 until 1845 (and perhaps after this). The collection, which resulted from some years residence in China, was first shown in Philadelphia in 1838, where it attracted considerable interest. It contained objects illustrating all aspects of Chinese life and culture. In addition, there were four natural history cases, six cases of birds, four cases of shells, two of butterflies, one of other insects and finally a case (No. LX) containing “Various specimens of fish from the waters of China, so prepared and preserved as to need only their natural element to give them the appearance of life” according to Langdon* (1843: 112).

Two catalogues of Nathan Dunn's collection were published in Philadelphia (Dunn, 1839 and Wines, 1839), but in neither of these are the fish specimens mentioned although both refer to fish drawings. Richardson also mentioned these drawings in the Report and it is tempting to think that they derived from Reeves. The records of the Academy of Natural Sciences in Philadelphia show that Dunn became a corresponding member in 1828 *while residing in Canton*, and he would almost certainly have known both John Reeves and his son since they shared so many interests. The Philadelphia Museum of Art possesses a copy of the catalogue by Wines (*loc. cit.*) in which a previous owner has pencilled in notes on Dunn. According to these, Dunn came from southern New Jersey, embarked on a mercantile life, spent nine years in China and opened the Chinese Museum in Philadelphia on 22nd December, 1838. Dunn was apparently a bachelor and Miss Gordon Lee of the Philadelphia Museum of Art informs me that he died in Vevey in Switzerland on 15th September, 1844. This would explain Richardson's final reference to Nathan Dunn in the Report (p. 193) as the “late proprietor”.

The fate of the Dunn collection is uncertain. There is no reference to this collection in the acquisition lists of natural history material donated or sold to the British Museum; neither is there any reference to art works in the registers of the Victoria and Albert Museum in London or the Philadelphia Museum of Art. According to

* William B. Langdon was Curator of the Chinese Collection. He compiled a catalogue which ran to two editions (1842, 1843).

Shinn (1957) the collection, after it was shown in London, was shipped to Edinburgh, damaged en route and eventually largely destroyed by fire.

The only other reference to Dunn is his philanthropic donation of \$50 to transfer books to Philadelphia from Robert Owen's by then failing socialist colony at New Harmony on the Wabash River.* This must have occurred in 1827, for by the next year Dunn was in Canton.

LIST OF REEVES FISH DRAWINGS

The following list comprises 332 Reeves drawings catalogued under the names used by Richardson (which are also written against the drawings in the Richardson set). The genus and species names are alphabetically arranged within families, and the arrangement, spelling and synonymies of the families follow Greenwood *et alii* (1966).

Each name is followed by a page reference to its appearance in Richardson's works (i.e. Report, Sulphur, etc.), and the Reeves' drawing number (cited as R. 174, R. α48, R. β32, etc.). Previously published figures taken from Reeves drawings are cited in parenthesis immediately after the Reeves number.

Species described as new by Richardson partly or wholly on the basis of a Reeves drawing are shown in bold face italic (remainder plain italic). Species based solely on a Reeves figure are marked with an asterisk. Type or possible type specimens are listed with the prefix BMNH. (or UMZC. for Vachell material in the University Museum of Zoology in Cambridge).

Occasional references to Günther's "Catalogue" are cited as Günther, followed by the volume number and page.

Reference to plates in the present work is made in bold face following each citation.

HETERODONTIDAE

1. *Cestracion zebra*, Report 195, R. 174.

SCYLLIORHINIDAE

2. *Chiloscyllium plagiosum*, Report 194, R. 252, α2.
3. *Scyllium maculatum*, Report 193, R. 264.

CARCHARHINIDAE

4. *Carcharias (Scoliodon) acutus*, Report 194, R. α5.
5. *Carcharias (Prionodon) dussumieri*, Report 194, R. α1.
6. *Carcharias (Prionodon) melanopterus*, Report 194, R. α3.

SPHYRNIDAE

7. *Sphyrna zygaena*, Report 194, R. α4.

RHINOBATIDAE

8. *Platyrrhina sinensis*, Report 196, R. 182.
- *9. ***Rhinobatus hynnicephalus***, Report 195, solely on R. α7. **Pl. 11a.**

* Books had been an important element in this colony where, among the intellectuals, were men like Say the conchologist, LeSueur the superb natural history artist and the eccentric naturalist Rafinesque. The young Abraham Lincoln is said to have seen the colonists pass up the river on their way to New Harmony and to have begged his father to let him join them—not through any incipient communistic tendencies, but because the colonists had books and he was desperate to learn.

RHYNCHOBATIDAE

10. *Rhina ancylostomus*, Report 195, R. ̢74.

TORPEDINIDAE

- *11. *Narcine lingula*, Report 196, on R. 227 and fig. by Dr. Wight. **Pl. 11b.**
12. Muh cho poo, Report 196, R. 6 (not named).

RAJIDAE

13. *Raia kenojei*, Report 197, R. 198.

DASYATIDAE

14. *Trygon bennettii*, Report 197, R. ̡45.
*15. *Trygon carnea*, Report 197, solely on R. 226. **Pl. 1a.**
16. *Trygon uarnak*, Report 197, R. ̡7, 279?

MYLIOBATIDAE

17. ? *Aetobates flagellum*, Report 198, R. 273, ?236.
18. *Myliobates maculatus*, Report 198, R. 212.
19. *Myliobates nieuhofii*, Report 198, R. ̡38.

GYMNURIDAE

- *20. ?*Myliobates oculus*, Report 198, solely on R. 281 (Reeves copy p. 104). **Pl. 11c.**
21. *Pteroplatea micrura*, Report 197, R. ̡48, 209, 235.

ELOPIDAE

22. *Elops machnata*, Report 311, R. 137 (pl. 7i in Whitehead, 1966).
*23. *Elops purpurescens*, Report 311, solely on R. ̡53 (pl. 7ii in Whitehead, 1966).
*24. *Megalops curtifilis*, Report 310, solely on R. 136 (Whitehead, 1966: pl. 6iii).
25. *Megalops setipinnis*, *Ann. Mag. nat. Hist.*, **10**: 493, Report 310, R. 96 (pl. 6ii in Whitehead, 1966) and on specimens (BMNH.1964.11.6.14—HOLOTYPE, a skin from Port Essington).

ANGUILLIDAE

- *26. *Anguilla avisotis*, Sulphur 104, Report 312, solely on R. 222 (pl. 51i in Sulphur).

MURAENIDAE

- *27. *Muraena cerino-nigra*, Report 314, solely on R. no number (drawing not found).
28. *Muraena isingleena*, Sulphur 108, pl. 48i (as *isingteena*), Report 314, on R. 237 and Reeves specimens (apparently lost).
*29. *Muraena reevesii*, Sulphur 109, Report 314, solely on R. 68 (pl. 49ii in Sulphur).
30. *Muraena thyrsoides*, Sulphur 111, pl. 49i, Report 314, on R. 220 and Reeves specimens (apparently lost).

MURAENESOCIDAE

31. *Congrus tricuspidatus*, Report 312, R. ̡41.

CONGRIDAE

- *32. *Congrus fasciatus*, Report 312, solely on R. 284. **Pl. 12a.**

CLUPEIDAE

33. *Alosa palasah*, Report 306, R. ̢51 (pl. 3i in Whitehead, 1966).
34. *Alosa reevesii*, Report 305, on R. ̡8 (pl. 2iii in Whitehead, 1966) and on Reeves specimens (BMNH.1963.8.20.2—HOLOTYPE).

35. *Chatoessus aquosus*, Report 307, on R.63 (pl. 4i in Whitehead, 1966) and on Reeves specimen (BMNH.1964.11.6.5).
36. *Chatoessus chrysopterus*, Report 308, on R.61 (pl. 4iii in Whitehead, 1966) and on Descr. Anim.: 200, fig. 148 (see above, p. 203).
37. *Chatoessus maculatus*, Report 308, on R.109 (pl. 5i in Whitehead, 1966) and on Vachell specimen (lost—Whitehead & Joysey, 1967).
38. *Chatoessus triza*, Report 307, R.224 (pl. 4ii in Whitehead, 1966).
- *39. *Clupea caeruleo-vittata*, Report 305, solely on R.59 (pl. 2i in Whitehead, 1966).
40. *Clupea flos-maris*, Report 305, on R.64 (pl. 2ii in Whitehead, 1966) and on Descr. Anim.: 201, fig. 149 (see above, p. 203).
41. *Clupea isingleena*, Report 304, on R.60 (pl. iii in Whitehead, 1966) and on Reeves specimen (BMNH.1963.6.17.1).
42. *Clupea nymphaea*, Report 304, on R.β35 (pl. iii in Whitehead, 1966) and on Reeves specimen (? lost—Whitehead, 1966 : 27).
43. *Ilisha abnormis*, Report 306, on R.67, 81 (pl. 3ii and iii in Whitehead, 1966) and on Reeves specimen (BMNH.1964.11.6.4—HOLOTYPE).

ENGRAULIDAE

44. *Coilia grayii*, Sulphur 99, pl. 54i and ii, Report 309, on R.α14 (pl. 5ii in Whitehead 1966) and on Capt. Dawkins specimen (BMNH.1855.9.19.1581—HOLOTYPE).
45. *Coilia playfairii*, Report 309, R.β26 (pl. 5ii in Whitehead, 1966).
46. *Thryssa mystax*, Report 309, R.138 (pl. 6i in Whitehead, 1966).

CHIROCENTRIDAE

47. *Chirocentrus dorab*, Report 311, R.β47 (pl. 7iii in Whitehead, 1966).

SALANGIDAE

48. *Leucosoma chinensis*, Report 303, R.144.

SYNODONTIDAE

- *49. *Saurus argyrophanes*, Report 302, solely on R. β15. **Pl. 12b.**
50. *Saurus lemniscatus*, Report 301, R.188.
51. *Saurus variegatus*, Report 301, R.187.

HARPADONTIDAE

52. *Saurus nehereus*, Report 301, R.α18.

CYPRINIDAE

53. *Abramis bramula*, Report 294, R.108.
- *54. *Abramis terminalis*, Report 294, solely on R. 80. **Pl. 12c.**
55. *Barbus deauratus*, Report 294, R.154.
- *56. *Cyprinus abbreviatus*, Report 292, solely on R. 124. **Pl. 13a.**
- *57. *Cyprinus acuminatus*, Report 289, solely on R. 125. **Pl. 13b.**
- *58. *Cyprinus atro-virens*, Report 287, solely on R. 116. **Pl. 14a.**
59. *Cyprinus auratus*, Report 293, R.121.
- *60. *Cyprinus carassoides*, Report 291, solely on R. 126. **Pl. 14b.**
- *61. *Cyprinus flammans*, Report 285, solely on R. 118. **Pl. 15a.**
- *62. *Cyprinus ? fossicola*, Report 291, solely on R. α40. **Pl. 15b.**
63. *Cyprinus gibeloides*, Report 292, R.123.
- *64. *Cyprinus hybiscoides*, Report 289, solely on R. 156. **Pl. 16a.**
65. *Cyprinus nigro-auratus*, Report 290, R.119.
66. *Cyprinus rubro-fuscus*, Report 288, R.117.
- *67. *Cyprinus sculponeatus*, Report 290, solely on R. 120. **Pl. 16b.**
68. *Cyprinus viridi-violaceus*, Report 288, R.157.

69. *Leuciscus acutus*, Report 297, on R. 42 and on Descr. Anim.: 205, fig. 194 (see above, p. 203).
70. *Leuciscus bambusa*, Sulphur 141, Report 299, on R. 286 and on Reeves specimen (BMNH. 1962.2.8.1; 16 inches, HOLOTYPE).
71. *Leuciscus curriculus*, Report 299, on R. 141 and Reeves specimen (BMNH. 1962.2.5.1—8½ inches, ? HOLOTYPE).
- *72. *Leuciscus recurviceps*, Report 295, solely on R. 149. **Pl. 17a.**
- *73. *Leuciscus hemistictus*, Report 296, solely on R. 133. **Pl. 17b.**
- *74. *Leuciscus homospilatus*, Report 300, solely on R. 20. **Pl. 17c.**
75. *Leuciscus idella*, Report 297, R. 122.
- *76. *Leuciscus machaeroides*, Report 297, solely on R. 111. **Pl. 18a.**
77. *Leuciscus molitorella*, Report 296, R. 110.
78. *Leuciscus molitrix*, Report 295, R. 54.
79. *Leuciscus nobilis*, Sulphur 140, pl. 63iii, Report 295, on R. 134 and on Reeves specimen (BMNH. 1968.3.11.4—stuffed, 14 inches, HOLOTYPE).
- *80. *Leuciscus piceus*, Report 298, solely on R. 153. **Pl. 18b.**
- *81. *Leuciscus xanthurus*, Report 298, solely on R. 112. **Pl. 18c.**

COBITIDAE

82. *Cobitis anguillicaudatus*, Report 300, R. 278.
- *83. *Cobitis psammismus*, Report 300, solely on R. 145. **Pl. 19a.**

ICTALURIDAE

84. *Pimelodus guttatus*, Report 285, R. 129, 130, 132.

BAGRIDAE

- *85. ? *Bagrus* (an *Pimelodus*?) *boudierius*, Report 283, solely on R. 203 (Descr. Anim. fig. 162 shows related species, not named). **Pl. 19b.**
- *86. *Pimelodus* ? *fulvi-draco*, Report 286, solely on R. 155. **Pl. 1b.**

SILURIDAE

87. *Silurus sinensis*, Report 281, R. 131.
88. *Silurus xanthosteus*, Sulphur 133, pl. 56xii–xiv, Report 281, on R. 102 and Reeves and Cantor specimens (BMNH. 1968.3.11.29—Cantor's *punctatus* types, ex Chusan).

CLARIIDAE

89. *Clarias pulicaris*, Sulphur 135, pl. 62v and vi, Report 287, on R. 16 and Reeves specimen (BMNH. 1968.3.11.21–22—the larger the HOLOTYPE).

ARIIDAE

90. *Arius falcarius*, Sulphur 134, pl. 62vii–ix, Report 284, on R. 101 and Reeves specimen (apparently lost).
- *91. ? *Bagrus crinalis*, Report 282, solely on R. 217. **Pl. 19c.**
- *92. *Galeichthys stanneus*, Report 284, solely on R. 238. **Pl. 20a.**
- *93. *Pimelodus mong*, Report 286, solely on R. 20. **Pl. 20b.**

PLOTOSIDAE

94. *Plotosus lineatus*, Report 286, R. 11.

LOPHIIDAE

95. *Lophius setigerus*, Report 203, R. 161.

OGCOCEPHALIDAE

96. *Halieutea stellata*, Report 203, R. no number.

EXOCEOTIDAE

97. *Hemirhamphus intermedius*, Report 264, R.167.

BELONIDAE

98. *Belone caudimaculata*, Report 264, R.β33.
*99. *Belone ciconia*, Report 264, solely on R.186 (pl. 1i and ii in Mees, 1962).

HOLOCENTRIDAE

100. *Holocentrum albo-rubrum*, Report 223, R.α19.
101. *Holocentrum spinosissimum*, Report 223, R.84.

FISTULARIIDAE

102. *Fistularia immaculata*, Report 247, R.185.

CHANNIDAE

- *103. *Ophicephalus jovis*, Report 252, solely on R. 143. **Pl. 2a.**
104. *Ophicephalus maculatus*, Report 251, R.β19, 148.
*105. *Ophicephalus puticola*, Report 252, solely on R. 142. **Pl. 20c.**

SYNBRANCHIDAE

- *106. *Monopterus? helvolus*, Report 316, solely on R. (p. 124s, no number), H. 312. **Pl. 20d.**
*107. *Ophicardia xanthognatha*, Sulphur 118 (as *Monopterus*), Report 316, solely on R.221 (as pl. 52vii in Sulphur).

SCORPAENIDAE

108. *Apistes alatus*, Report 213, R.169.
109. *Pterois lunulata*, Report 213, R.165.
110. *Pterois volitans*, Report 213, R.β1, 261.
*111. *Scorpaena leonina*, Report 216, solely on R. 66. **Pl. 2b.**
112. *Sebastes pachycephalus*, Report 214, R.218.
113. *Sebastes vachellii*, Report 214, on R.69? (pl. 2iii in Whitehead & Joysey, 1967) and on Vachell specimen (lost).

TRIGLIDAE

114. *Trigla burgeri*, Report 218, R.β3.
115. *Trigla papillionacea*, Report 218, on R.159 and on Solander description (MS. in BMNH.), Parkinson drawing 104 (pl. 35 in Whitehead, 1968) and Chinese and Australian specimens (BMNH.1968.3.11.19—possibly seen by Richardson).

SYNACEJIDAE

116. *Pelor cuvieri*, Report 212, R.164 (as pl. 39iv in Sulphur).
117. *Pelor japonicum*, Report 212, R.140.
118. *Pelor tigrinum*, Report 212, on R.β42 (pl. 3i in Whitehead & Joysey, 1967) and Vachell specimen (UMZC. II 151).

PLATYCEPHALIDAE

- *119. *Platycephalus cultellatus*, Report 217, solely on R. β28. **Pl. 21a.**
120. *Platycephalus guttatus*, Report 217, R.65.

CENTROPOMIDAE

121. *Lates calcarifer*, Report 222, R.α11.
122. *Lates nobilis*, Report 222, R.α10.

SERRANIDAE

123. *Diploprion bifasciatum*, Report 221, R. α27.
 124. *Labrax japonicus*, Report 222, R. 135.
 125. *Lobotes incurvus*, Report 237, on R. 168 and British Museum specimen (BMNH. 1968. 3. 11. 7-8—two fishes, 9½–10½ inches, one claimed as type by Günther, 1 : 338).
 126. *Plectropoma susuki*, Report 230, R. α34.
 127. *Serranus altivelis*, Report 230, R. 267.
 *128. *Serranus cyanopodus*, Report 249, solely on R. 249. **Pl. 3a.**
 129. *Serranus formosus*, Report 233, R. α46.
 130. *Serranus gilberti*, *Ann. Mag. nat. Hist.*, 9 : 19, Report 230, on R. 257 and on British Museum specimens (BMNH. 1968. 3. 11. 3—*ex* Port Essington, HOLOTYPE).
 131. *Serranus marginalis*, Report 233, R. 246.
 132. ? *S. marginalis* juvenile, Report 234, R. 255.
 133. *Serranus megachir*, Report 230, on R. 113 and Reeves specimen (BMNH. 1968. 3. 11. 2—HOLOTYPE).
 *134. *Serranus reevesii*, Report 232, solely on R. 211. **Pl. 3b.**
 135. *Serranus shihpan*, Report 231, on R. 71 (pl. 2i in Whitehead & Joysey, 1967) and on specimens from Vachell (?lost) and in British Museum (apparently lost).
 136. *Serranus stigmatomus*, Report 232, on R. 72 and Reeves specimen which was model for figure (not recorded by Günther, 1 : 112—apparently lost).
 *137. *Serranus variegatus*, Report 231, solely on R. 87. **Pl. 4a.**

THERAPONIDAE

138. *Therapon oxyrhynchus*, Report 239, R. 193.
 139. *Therapon quadrilineatus*, Report 239, R. β34.
 140. *Therapon servus*, Report 238, R. β44.
 141. *Therapon theraps*, Report 238, R. α43.

PRIACANTHIDAE

142. *Priacanthus tayenus*, Report 237, on R. β14 (pl. zii in Whitehead & Joysey, 1967) and on specimens from Vachell (lost) and Reeves (BMNH. 1965. 8. 12. 50—9¾ inches, SYNTYPE).

APOGONIDAE

143. *Apogon novem-fasciatus*, Report 221, R. β9.
 144. *Apogon trimaculatus*, Report 221, R. 70.

SILLAGINIDAE

145. *Sillago japonica*, Report 223, R. β40.

BRANCHIOSTEGIDAE

146. *Latilus argentatus*, Report 239, R. 192.

LACTARIIDAE

147. *Lactarius delicatulus*, Report 272, R. 170.

RACHYCENTRIDAE

148. *Elecate bivittata*, Report 269, R. 172.

ECHENEIDAE

149. *Echeneis naucrates*, Report 203, R. 97h.

CARANGIDAE

150. *Blepharis fasciatus*, Report 271, R. 269.
 151. *Caranx cancroides*, Report 274, on R. β 30 (pl. iii in Whitehead & Joysey, 1967) and on Vachell specimen (lost).
 *152. *Caranx cestus*, Report 274, solely on R. α 39. **Pl. 4b.**
 *153. *Caranx chrysophrys* var. *hyemalis*, Report 275, solely on R. 239. **Pl. 21b.**
 154. *Caranx flavo-caeruleus*, Report 275, R. 213.
 155. *Caranx forsteri*, Report 275, R. 214.
 156. *Caranx malabaricus*, Report 275, R. β 21.
 *157. *Caranx margarita*, Report 276, solely on R. (no number, p. 126r), H. 205 and Reeves copy, p. 124. **Pl. 21c.**
 158. *Caranx muroadsi*, Report 274, R. β 36.
 159. *Caranx nigripes*, Report 275, R. 181.
 160. *Caranx rotleri*, Report 273, R. 206.
 *161. *Chorinemus delicatulus*, Report 269, solely on R. i 92 (in Reeves copy p. 124). **Pl. 22a.**
 *162. *Chorinemus leucophthalmus*, Report 269, solely on R. 219. **Pl. 22b.**
 163. *Gallichthys major*, Report 271, R. 189.
 164. *Seriola auro-vittata*, Report 271, R. 230.
 165. *Scyris indica*, Report 276, R. α 17.
 166. *Trachinotus auratus*, Report 270, on R. 104 and on Reeves specimen (apparently lost).

FORMIONIDAE

167. *Stromateus niger*, Report 272, R. 194 (*Seserinus vachellii* Rich. belongs in this family—Whitehead & Joysey, 1967).

LEIOGNATHIDAE

168. *Equula nuchalis*, Report 276, R. g 90, b 58.
 169. *Equula rivulata*, Report 276, R. c 86.

SPARIDAE

170. *Chrysophrys auripes*, Report 241, on R. 128 and on Reeves specimen (apparently lost).
 171. *Chrysophrys berda*, Report 240, R. 223.
 172. *Chrysophrys cardinalis*, Report 241, R. 199.
 173. *Chrysophrys xanthopoda*, Report 241, on R. 85 and on Reeves specimen (apparently lost).
 174. *Chrysophrys* sp., Report 241, R. 95.
 175. *Dentex setigerus*, Report 242, R. β 58.
 *176. *Lethrinus anatus*, Sulphur 145, Report 242, solely on R. 245. **Pl. 5a.**
 177. *Lethrinus haematopterus*, Report 242, R. 232.
 178. *Pagrus unicolor*, Report 242, R. 160.

SCIAENIDAE

- *179. *Corvina? albiflora*, Report 226, solely on R. β 48. **Pl. 22c.**
 180. *Corvina catalea*, Report 226, R. 207.
 181. *Corvina grypota*, Report 225, on R. β 12 and on Haslar Museum specimen (apparently lost).
 182. *Corvina nalla-katchelee*, Report 226, on R. 225 and on two Reeves specimens (apparently lost).
 183. *Corvina sina*, Report 225, R. 94.
 184. *Otolithus argenteus*, Report 225, R. 200.
 185. *Otolithus aureus*, Report 224, on R. 234 and on two Reeves fishes (lost—neotype designated by Trewavas & Yazdani, 1966).

186. *Otolithus tridentifer*, Report 225, on R. β 54 and on a British Museum specimen (apparently lost).
187. *Sciaena crocea*, Report 224, on R. 139 and on Reeves specimen (not found by Günther, 2: 284; BMNH.1968.3.11.9—designated NEOTYPE by Trewavas, in press).
188. *Sciaena lucida*, Sulphur 87, pl. 44iii and iv, Report 224, on R. β 6 and on specimens in Cambridge (lost), Haslar Museum and British Museum (BMNH.1848.3.18.107-8—larger fish probably type *vide* Whitehead & Joysey, 1967).
189. *Umbrina russelii*, Report 226, R. β 37.

MULLIDAE

190. *Upeneus bensasi* affn., Report 220, R. α 44.
191. *Upeneus biaculeatus*, Report 219, on R. α 22 and on Reeves specimen (BMNH.1968.3.11.10-11—two skins, $7\frac{1}{2}$ and $11\frac{1}{2}$ inches, ? one the HOLOTYPE).
192. *Upeneus bilineatus* affn., Report 220, R. 250.
193. *Upeneus chrysopleuron*, Report 219, R. 268.
194. *Upeneus russelii*, Report 220, R. α 36.
195. *Upeneus tragula*, Report 220, on R. α 21 and on Reeves and Bankier specimens (BMNH.1968.3.11.12; $7\frac{1}{4}$ inches, skin, Reeves specimen, SYNTYPE).

MONODACTYLIDAE

196. *Psettus argenteus*, Report 246, R. 240.

KYPHOSIDAE

- *197. *Crenidens leoninus*, Report 242, solely on R. 263. **Pl. 5b.**
198. *Crenidens melanichthys*, Report 243, R. 247.
199. *Crenidens punctatus*, Report 242, R. 79.

EPHIPPIDAE

200. *Drepane longimana*, Report 245, R. 241.
201. *Drepane punctata*, Report 244, R. 51.
202. *Ephippus orbis*, Report 245, R. 210.
203. *Platax ehrenbergii*, Report 245, R. 103.

LUTJANIDAE

204. *Diacope borensis*, Report 229, R. 196.
205. *Diacope octolineata*, Report 229, R. 93.
206. *Mesoprion hoteen*, Report 229, on R. α 28 and on two Reeves specimens (BMNH.1968.3.11.5-6—two skins, 12 and $6\frac{1}{2}$ inches, SYNTYPES).
207. *Mesoprion unimaculatus*, Report 229, R. α 25.
208. *Serranus vitta*, Report 234, R. β 37.

LOBOTIDAE

- *209 *Lobotes citrinus*, Report 237, solely on R. 191. **Pl. 6a.**

GERRIDAE

210. *Gerres equula*, Report 239, R. 215.
211. *Gerres punctatus*, Report 240, R. 260.
212. *Gerres* sp., Report 240, R. β 39.

POMADASYIDAE

213. *Diagramma cinctum*, Report 226, R. 82.
214. *Diagramma gaterina*, Report 227, R. α 50.
215. *Diagramma poecilopterum*, Report 227, R. 190.
216. *Diagramma punctatum*, Report 227, R. 78.

217. *Hapalogenys analis*, *Ann. Mag. nat. Hist.*, **13** : 463, Sulphur 85, pl. 43iii, Report 235, on R.91 and on Reeves specimen (apparently lost).
218. *Hapalogenys maculatus*, Report 235, on R.49 and on British Museum specimen ("no such specimen in the Collection"—Günther, **1** : 317).
219. *Hapalogenys nitens*, Sulphur 84, pl. 43i and ii, Report 235, on R.92 and on Reeves specimen, model for the drawing (BMNH.1968.3.11.1—3½ inches, HOLOTYPE).
- *220. *Pristipoma* ? *chloronotum*, Report 228, solely on R. 231. **Pl. 6b.**
- *221. *Pristipoma*? *gallinaceum*, Report 228, solely on R. 222. **Pl. 23a.**
- *222. *Pristipoma*? *grammopoecilium*, Report 228, solely on R. 29. **Pl. 7a.**
223. *Pristipoma japonicum*, Report 228, R.202.
224. *Pristipoma kakaan*, Report 227, R.201.
225. *Pristipoma nageb*, Report 227, R.244.
226. *Pristipoma pihloo*, Report 227, on R.29 and on Reeves specimen ("appears to have been mislaid"—Günther, **1** : 292).
- *227. *Scolopsides pomotis*, Report 237, solely on R. 215. **Pl. 7b.**
228. *Scolopsides ruppellii*, Report 236, R.47.
229. *Scolopsis inermis*, Report 236, R.262.

SCATOPHAGIDAE

230. *Scatophagus argus*, Report 245, R.272?
231. *Scatophagus bougainvillii*, Report 245, R.83.
232. *Scatophagus ornatus*, Report 245, R.235.

CHAETODONTIDAE

233. *Chaetodon aureus*, Report 246, R.23.
234. *Chaetodon modestus*, Report 246, R.241.
235. *Chaetodon strigatus*, Report 246, R.24.
236. *Holacanthus septentrionalis*, Report 246, R.178.

OPLEGNATHIDAE

- *237 *Hoplegnathus maculosus*, Report 247, solely on R. 270. **Pl. 23b.**
238. *Hoplegnathus punctatus*, Report 247, R.212.

POMACENTRIDAE

- *239. *Amphiprion chrysargyrus*, Report 254, solely on R. 226. **Pl. 8a.**
240. *Glyphisodon caelestinus*, Report 253, R.256.
241. *Glyphisodon rahti*, Report 253, R.233.
242. *Glyphisodon tyrwhitti*, Report 253, R.231.
243. *Glyphisodon* sp., Report 253, R.274.
244. *Pomacentrus nigricans*, Report 254, R.232.

CIRRHITIDAE

245. *Cheilodactylus zonatus*, Report 239, R.243.
246. *Cirrhitus aureus*, Report 239, R.216.

CEPOLIDAE

- *247. *Cepola hungta*, Report 277, solely on R. 22. **Pl. 8b.**

MUGILIDAE

248. *Mugil haematocheilus*, Report 249, R.249.
249. *Mugil melanocranus*, Report 248, on R.73 and on Belcher fish (apparently lost).
- *250. *Mugil ventricosus*, Report 249, solely on R. 231. **Pl. 24a.**
- *251. *Mugil* (vel *Cestraeus*) *xanthurus*, Report 248, solely on R. 127. **Pl. 24b.**

SPHYRAENIDAE

252. *Sphyræna chinensis*, Report 266, R. 62.

POLYNEMIDAE

253. *Polynemus tetradactylus*, Report 218, R. 229, 242 (young?).
 254. *Polynemus xanthonemus*, Report 219, R. 215.

LABRIDAE

255. *Cheilio inermis*, Report 258, R. 100.
 256. *Cossyphus bilunulatus*, Report 256, R. 243.
 257. *Cossyphus cyanostolus*, Report 256, on R. 251 and on two fishes in spirits (= *Choerops oligocanthus* fide Günther, 4: 95) and a Reeves specimen (BMNH. 1968.3.11.15—skin, 13½ inches, HOLOTYPE).
 258. *Cossyphus ommopterus*, Report 257, on R. 98 and on Reeves specimen (BMNH. 1968.3.11.16—skin, 6 inches, HOLOTYPE).
 259. *Ctenolabrus aurigarius*, Sulphur 90, pl. 45i and ii, Report 258, on R. 224 and on Reeves specimen (BMNH. 1851.12.27.170—two fishes, 5½ and 6½ inches, SYNTYPES).
 260. *Ctenolabrus rubellio*, Sulphur 93, pl. 45, Report 258, on R. 90 and on Reeves specimen (BMNH. 1968.3.11.13; 6½ inches, ? HOLOTYPE).
 261. *Julis exornatus*, Report 258, on R. 210 (pl. 3iv in Whitehead & Joysey, 1967) and on Vachell, Reeves and Bankier specimens (BMNH. 1851.12.27.1634—four fishes, 5½–6½ inches, SYNTYPES).
 *262. *Julis exornatus* var. α ?, Report 259, solely on R. 258. **Pl. 24c.**
 *263. *Julis exornatus* var. β , Report 259, solely on R. 86. **Pl. 25a.**
 264. *Julis lunaris*, Report 260, R. 230.
 265. *Julis poecilopterus*, Report 260, on R. 233 and on Reeves specimen (apparently lost).
 *266. *Julis thesites*, Report 260, solely on R. 208. **Pl. 25c.**
 267. *Labrus eothinus*, Report 255, on R. 197 and on a Canton specimen (BMNH. 1968.3.11.14—skin, 9½ inches, HOLOTYPE).
 *268. *Xyrichtys puniceus*, Report 261, solely on R. 184. **Pl. 9a.**

SCARIDAE

269. *Calliodon chlorolepis*, Sulphur 137, pl. 64iv–vii, Report 263, on R. 77 and on Bankier fish (BMNH. 1847.5.10.14).
 270. *Scarus caeruleo-punctatus*, Report 263, R. 248.
 271. *Scarus limbatus*, Report 262, R. 213.
 272. *Scarus pyrostethus*, Report 262, on R. 76 and on Reeves specimen (BMNH. 1968.3.11.17—skin, 13 inches, HOLOTYPE).

URANOSCOPIDAE

273. *Uranoscopus asper*, Report 211, R. 162, 166.

BLENNIIDAE

- *274. *Blennius aurosplendidus*, Report 265, solely on R. 0 (not in Hardwicke set, not found elsewhere).
 *275. *Blennius fasciolaticeps*, Report 265, solely on R. (no number, present in Reeves set, p. 124 as "q"). **Pl. 25c.**

CALLIONYMIDAE

276. *Callionymus reevesii*, Sulphur 60, pl. 36i, ii and iii, Report 210, on R. 180 (as pl. 36iv in Sulphur) and on Belcher specimen (apparently lost).

GOBIIDAE

277. *Apocryptes serperaster*, Report 206, on R. $\beta 55$ (pl. 3ii in Whitehead & Joysey, 1967) and on two Vachell specimens (destroyed) (BMNH. 1965.8.12.51, a Reeves specimen of 6 inches labelled as type).
278. *Boleophthalmus auctuatorius*, Sulphur 148, pl. 62i-iv, Report 208, on R. $\beta 53$ and on specimens from Vachell, Reeves and Home (BMNH. 1965.8.12.52-53, presented by Richardson, the larger 2.65 inches total length and probably the measured specimen—Whitehead & Joysey, 1967 : 144).
279. *Boleophthalmus boddaerti*, Report 208, R. $\beta 38$.
- *280. *Boleophthalmus campylostomus*, Report 209, solely on R. $\beta 52$ (note on supposed type in Whitehead & Joysey, 1967 : 144, 155). **Pl. 26a.**
- *281. *Eleotris cantherius*, Report 209, solely on R. 114. **Pl. 26b.**
282. *Gobius chinensis*, Report 204, R. f 89.
283. *Gobius fasciato-punctatus*, Sulphur 145, pl. 62xiii-xiv, Report 204, on R. 146 and on Vachell and Reeves specimens (BMNH. 1968.3.11.18; 6¼ inches, HOLOTYPE).
284. *Gobius filifer*, Report 205, R. 276.
285. *Gobius ommaturus*, Sulphur 146, pl. 55i-iii, Report 205, on R. 147 and on Canton and Woosung specimens (original specimens appear to be lost).
286. *Gobius platycephalus*, Report 204, on R. 194 and on Vachell fish (destroyed—Whitehead & Joysey, 1967).
287. *Philypnus sinensis*, Report 210, R. $\beta 8$.
288. *Amblyopus rugosus*, Report 207, on R. $\beta 7$ and on Vachell fishes (destroyed—Whitehead & Joysey, 1967).

TRYPAUCHENIDAE

289. *Trypauchen vagina*, Report 206, R. $\beta 57$.

ACANTHURIDAE

290. *Amplacanthus fuscescens*, Report 243, R. 115.
291. *Amplacanthus margaritiferus*, Report 243, R. 259.
292. *Prionurus scalprum*, Report 244, R. 183.

TRICHIURIDAE

293. *Trichiurus armatus*, Report 268, R. $\beta 56$.

SCOMBRIDAE

294. *Cybium chinense*, Report 268, R. $\alpha 52$.
295. *Cybium commersonii*, Report 268, R. 228.
296. *Cybium guttatum*, Report 268, R. $\beta 46$.
297. ?*Cybium mertensii*, Report 268, R. 216.
298. *Scomber delphinalis*, Report 267, R. $\beta 23$.
299. *Scomber scombrus*, Report 267, R. 163.

NOMEIDAE

300. *Trachinotus melo*, Report 270, on R. 97 (pl. iiii in Whitehead & Joysey, 1967) and on Vachell specimen (destroyed).

STROMATEIDAE

301. *Stromateus argenteus*, Report 272, R. $\beta 32$.

PSETTODIDAE

302. *Hippoglossus dentex*, Sulphur 102, pl. 47, Report 278, on R. 195 and on Vachell and other specimens (apparently lost).
 *303. *Hippoglossus goniographicus*, Report 279, solely on R. 254. **Pl. 26c.**
 *304. *Hippoglossus orthohynchus*, Report 278, solely on R. 106. **Pl. 27a.**

BOTHIDAE

- *305. *Platessa balteata*, Report 278, solely on R. 205. **Pl. 9b.**
 306. *Platessa chinensis*, Report 277, R. 107a and b.
 *307. *Platessa chinensis* var. *caeruleo-oculea*, Report 277, solely on R. 204. **Pl. 10a.**
 308. *Platessa chrysoptera*, Report 278, R. 104.
 *309. *Platessa velafracta*, Report 278, solely on R. 105. **Pl. 27b.**

PLEURONECTIDAE

310. *Samaris cristatus*, Report 279, R. 171.

SOLEIDAE

- *311. *Solea foliacea*, Report 279, solely on R. β 5 and h 91. **Pl. 28a.**
 312. *Solea ommatura*, Report 279, on R. β 13 (pl. iiv in Whitehead & Joysey, 1967) and on two Vachell fishes (destroyed).
 *313. *Solea ovalis*, Report 279, solely on R. 179. **Pl. 10b.**

CYNOGLOSSIDAE

314. *Plagiusa abbreviata*, Report 280, R. β 17.
 *315. *Plagiusa auro-limbata*, Report 280, solely on R. 151. **Pl. 28b.**
 *316. *Plagiusa favosquamis*, Report 281, solely on R. β 50. **Pl. 28c.**
 *317. *Plagiusa melamptela*, Report 281, solely on R. 150. **Pl. 29a.**
 *318. *Plagiusa nigro-labeculata*, Report 280, solely on R. 152. **Pl. 29b.**
 *319. *Plagiusa puncitecps*, Report 280, solely on R. m 95 (p. 124 in Reeves copy). **Pl. 29c.**

TRIACANTHIDAE

320. *Triacanthus biaculeatus*, Report 202, R. α 24.

BALISTIDAE

321. *Aleuterus berardi*, Report 202, R. 173.
 322. *Balistes albo-caudatus*, Report 201, R. 265.
 323. *Balistes conspicillum*, Report 201, R. 285.
 324. *Balistes frenatus*, Report 201, R. 229.
 *325. *Balistes hihpe*, Sulphur 127, Report 200, solely on R. α 35 (as pl. 60ii in Sulphur).
 326. *Monacanthus bifilamentosus*, Report 201, R. 266.
 327. *Monacanthus chinensis*, Report 201, R. 89.
 328. *Monacanthus japonicus*, Report 201, R. 275.

OSTRACIONTIDAE

329. *Ostracion cornutus*, Report 200, R. (no number).

TETRAODONTIDAE

- *330. *Tetrodon laterna*, Sulphur 124, Report 199, solely on R. 99 (as pl. 61ii in Sulphur).
 331. *Tetrodon ocellatus*, Report 199, R. 271.
 332. *Tetrodon ocellatus* var. *guttulatus*, Sulphur 121, pl. 58iii, Report 199, on R. 96 o and on Reeves specimen (BMNH. 1968.3.11.20—3½ inches, too large to be the holotype).

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viridi-auratus, *Macropodus*, 251

viridi-violaceus, *Cyprinus*, 288, R. 157
viridus, *Julis*, 260
vitta, *Serranus*, 234, R. β 27
vittatus, *Ichthyophis*, 315, S. 114
volans, *Exocaetus*, 264
volitans, *Pterois*, 213, R. β 1, 261
vulgaris, *Mustelus*, 195
Sphyraena, 267
vultur, *Myliobates*, 198

woora, *Minous*, 213

xanthognatha, *Monopterus*, 316, S. 118,
R. 221
**Ophicardia*, 316, S. 118, R. 221
xanthonemus, *Polynemus*, 219, R. 15
xanthopoda, *Chrysophrys*, 241, R. 85
xanthopterus, *Tetrodon*, 317
xanthosteus, *Silurus*, 281, S. 133, R. 102
**xanthurus*, *Leuciscus*, 298, R. 112
**Mugil* (*vel Cestraeus*), 248, R. 127
Xyrichthys dea, 261
**puniceus*, 261, R. 184

zebra, *Cestracion*, 195, R. 174
Zeus japonicus, 266
nebulosus, 266
zonatus, *Cheilodactylus*, 239, R. β 43
zygaena, *Sphyrna*, 194, R. α 4

P. J. P. WHITEHEAD

Department of Zoology

BRITISH MUSEUM (NATURAL HISTORY)

CROMWELL ROAD

LONDON, S.W.7

PLATE I

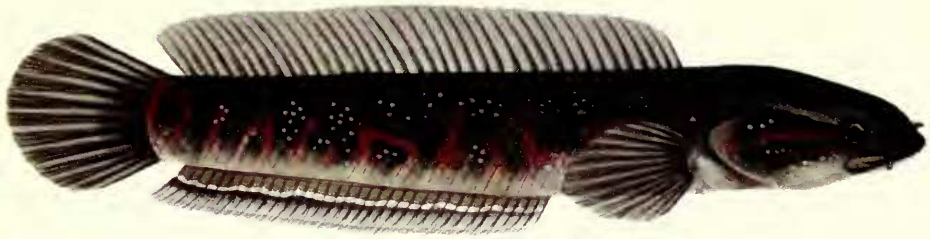
- a. *Trygon carnea* Rich. (Reeves No. 226), 280 mm. tot. l. (No. 15 in list).
- b. *Pimelodus fulvi-draco* Rich. (Reeves No. 155), 136 mm. tot. l. (No. 86 in list).



PLATE 2

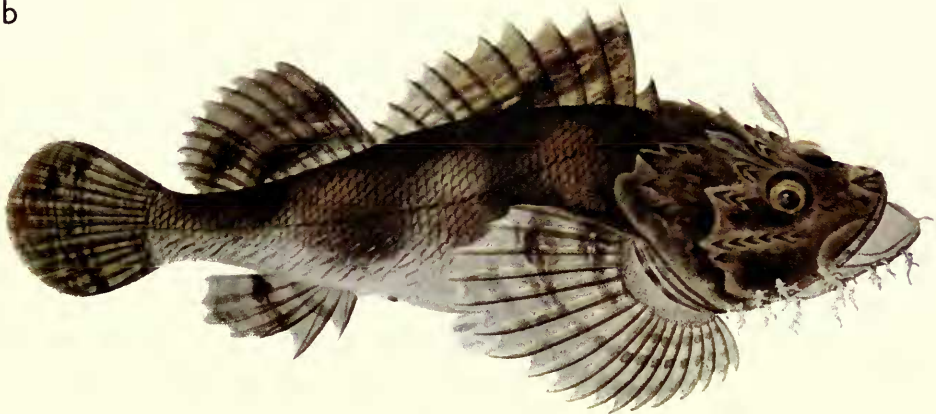
- a. *Ophicephalus jovis* Rich. (Reeves No. 143), 149 mm. tot. l. (No. 103 in list).
- b. *Scorpaena leonina* Rich. (Reeves No. 66), 224 mm. tot. l. (No. 111 in list).

a



魚 分 雷

b

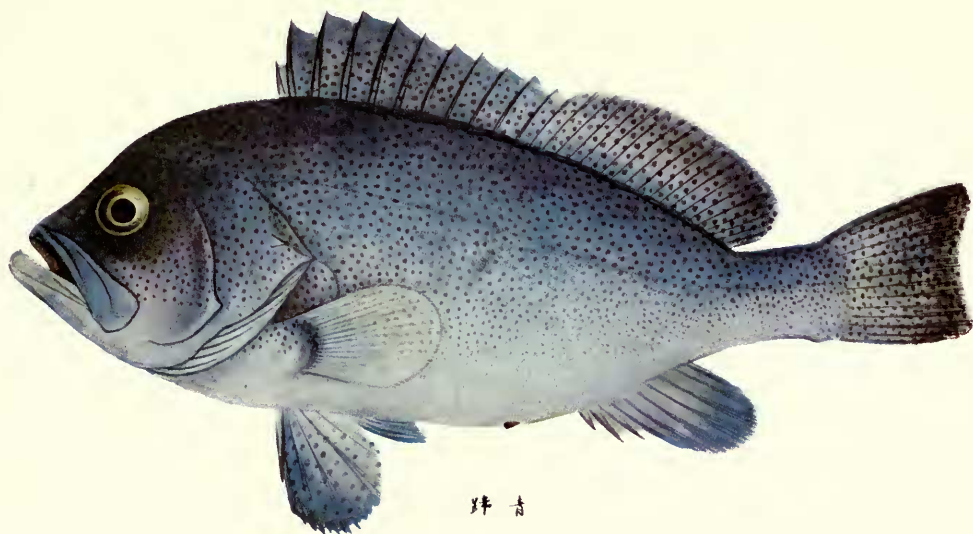


子 獅 石

PLATE 3

- a. *Serranus cyanopodus* Rich. (Reeves No. 249), 259 mm. tot. l. (No. 128 in list).
- b. *Serranus reevesii* Rich. (Reeves No. 211), 263 mm. tot. l. (No. 134 in list).

a



b

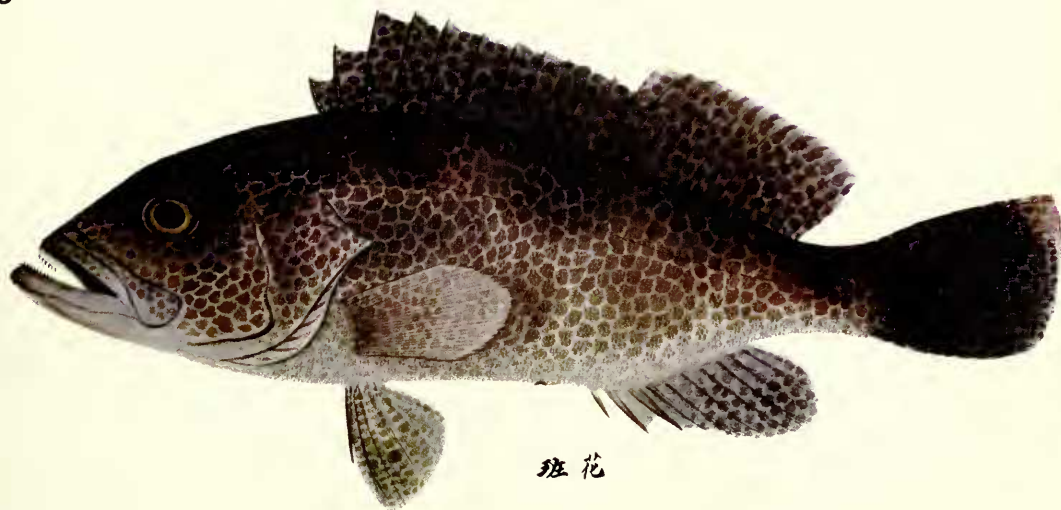
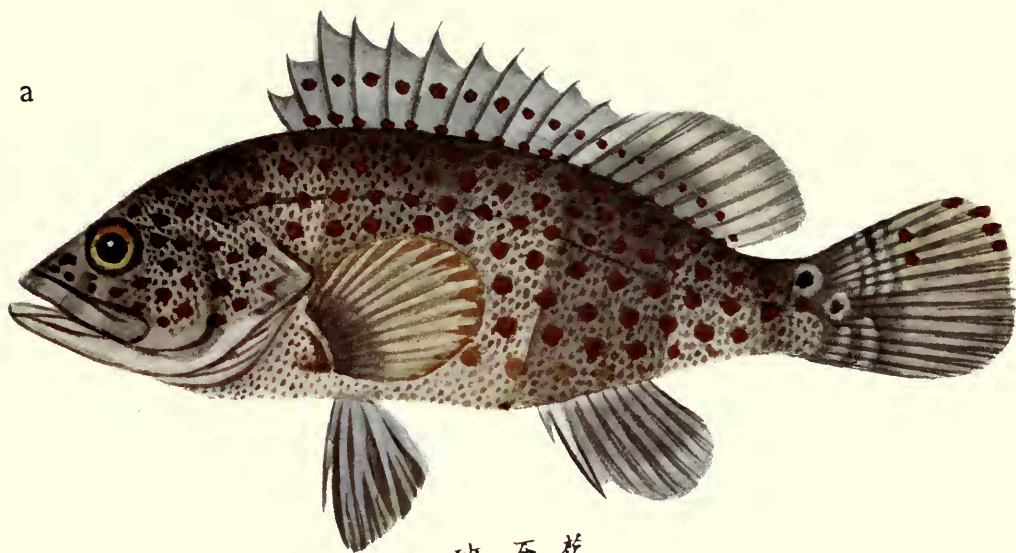


PLATE 4

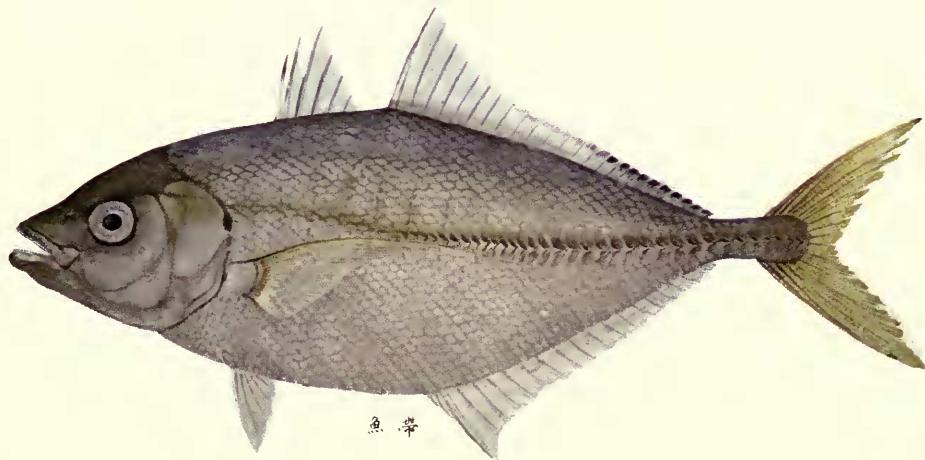
- a. *Serranus variegatus* Rich. (Reeves No. 87), 144 mm. tot. l. (No. 137 in list).
- b. *Caranx cestus* Rich. (Reeves No. 239), 246 mm. tot. l. (No. 152 in list).

a



班石花

b

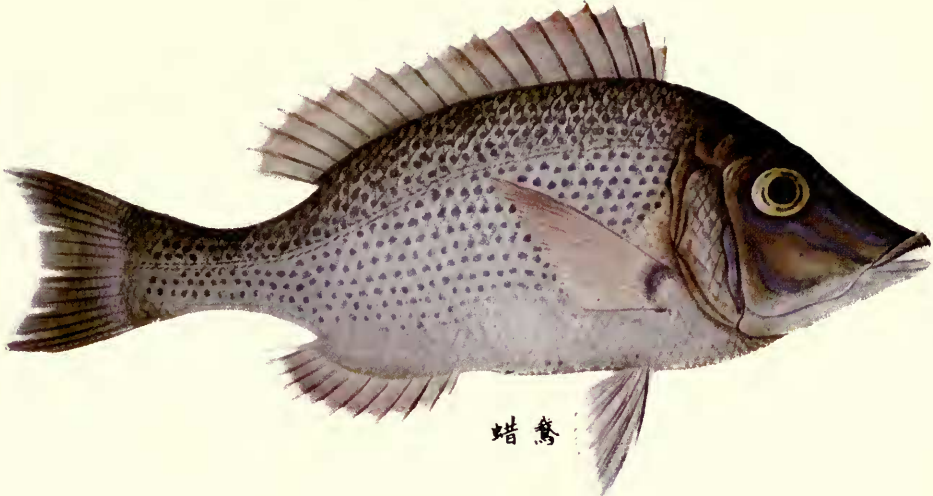


魚帶

PLATE 5

- a. *Lethrinus anataricus* Rich. (Reeves No. 245), 233 mm. tot. l. (No. 176 in list).
- b. *Crenidens leoninus* Rich. (Reeves No. 263), 362 mm. tot. l. (No. 197 in list).

a



b

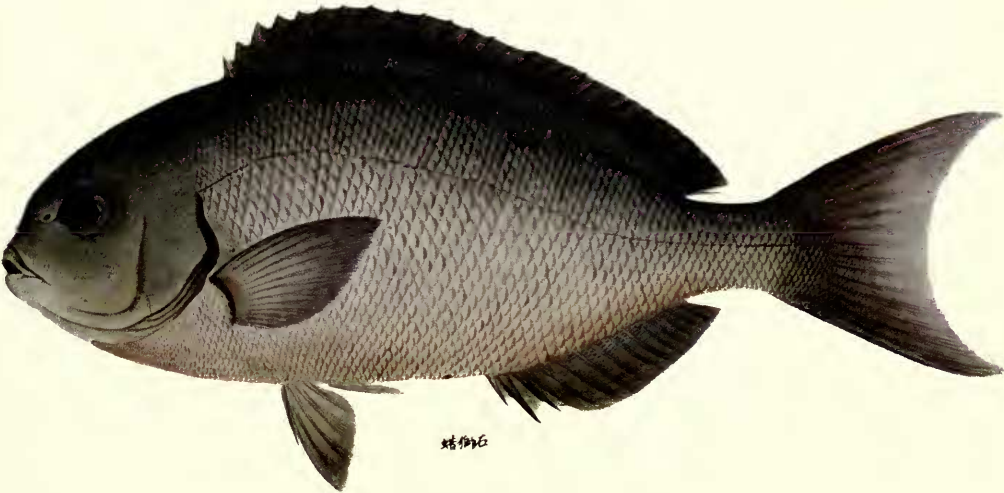
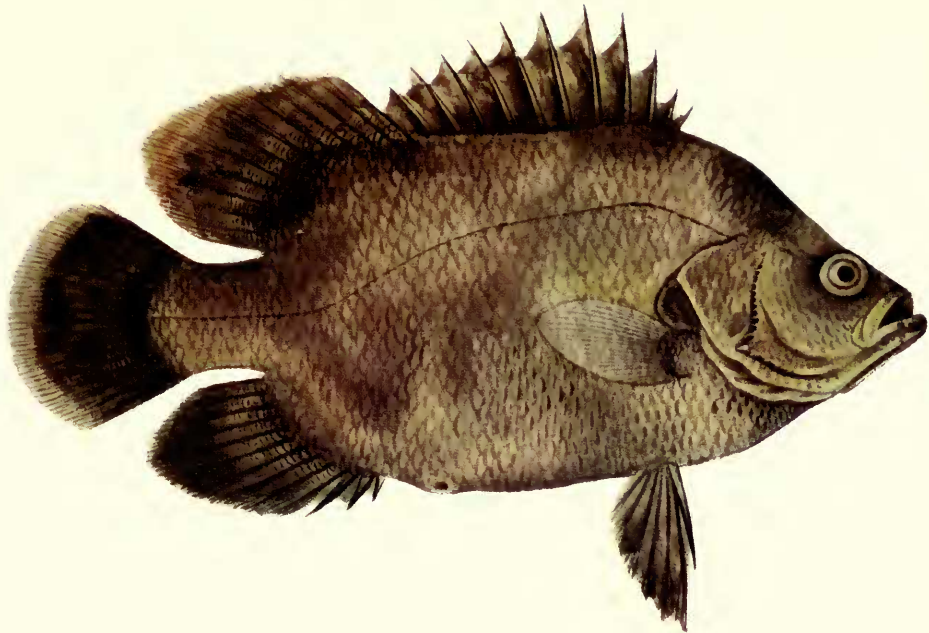


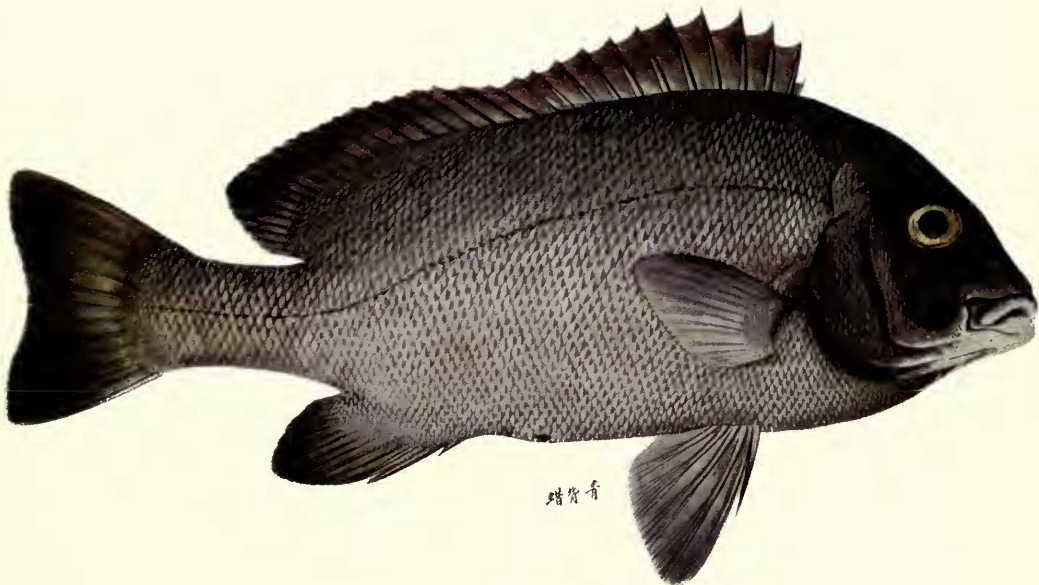
PLATE 6

- a. *Lobotes citrinus* Rich. (Reeves No. 191), 161 mm. tot. l. (No. 209 in list).
- b. *Pristipoma chloronotum* Rich. (Reeves No. 231), 350 mm. tot. l. (No. 220 in list).

a



b



蜡背青

PLATE 7

- a. *Pristipoma grammopocilium* Rich. (Reeves No. $\alpha 9$), 351 mm. tot. l. (No. 222 in list).
- b. *Scolopsides pomotis* Rich. (Reeves No. $\beta 15$), 166 mm. tot. l. (No. 227 in list).

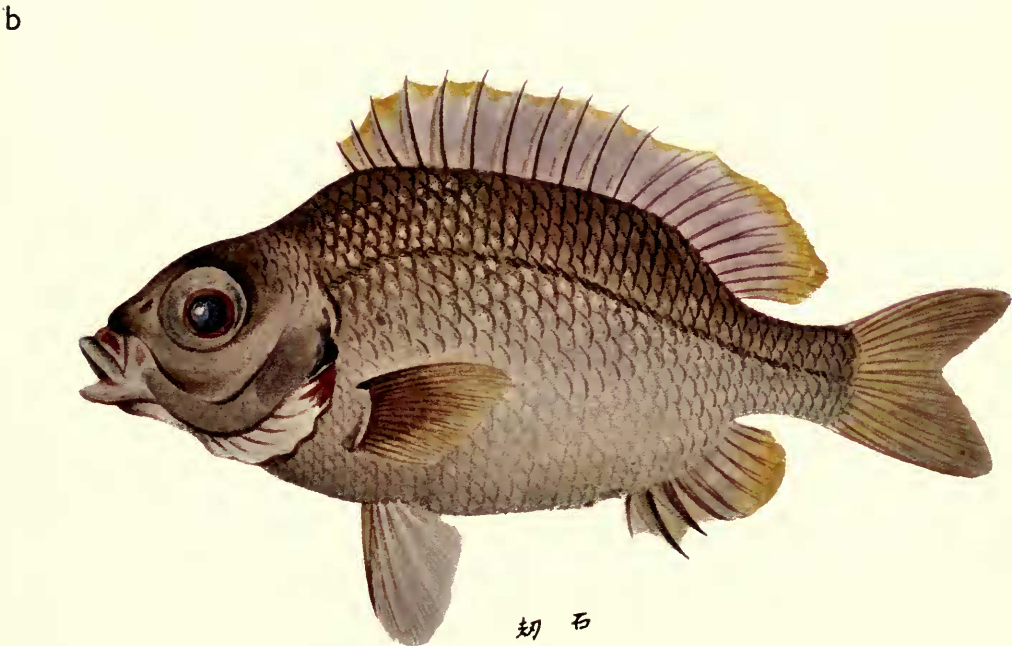
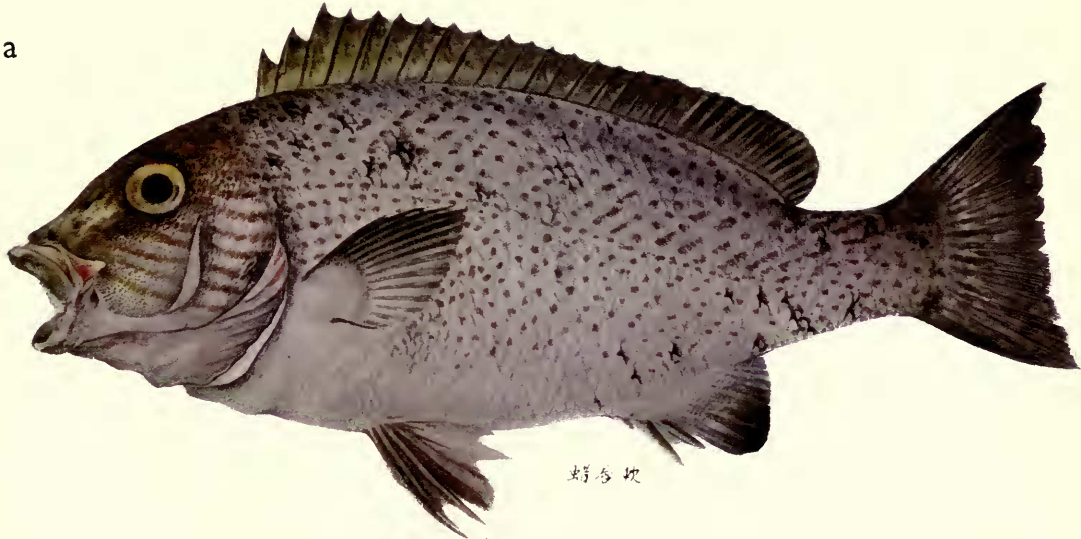
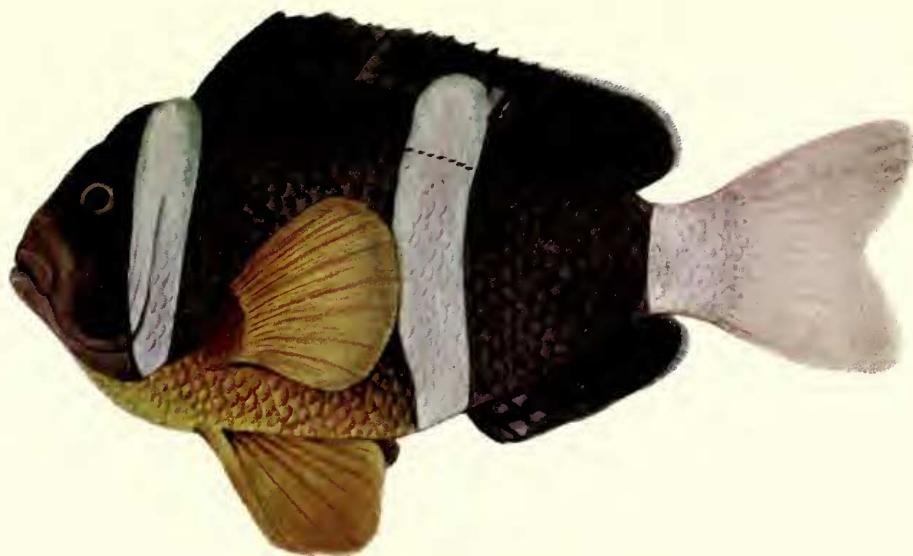


PLATE 8

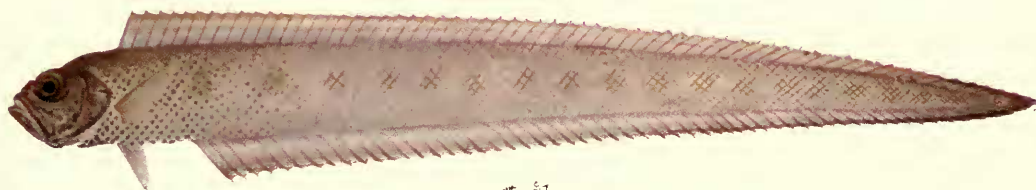
- a. *Amphiprion chrysargyrus* Rich. (Reeves No. $\alpha 26$), 108 mm. tot. l. (No. 239 in list).
- b. *Cepola hungta* Rich. (Reeves No. $\beta 2$), 306 mm. tot. l. (No. 247 in list).

a



魚金海

b

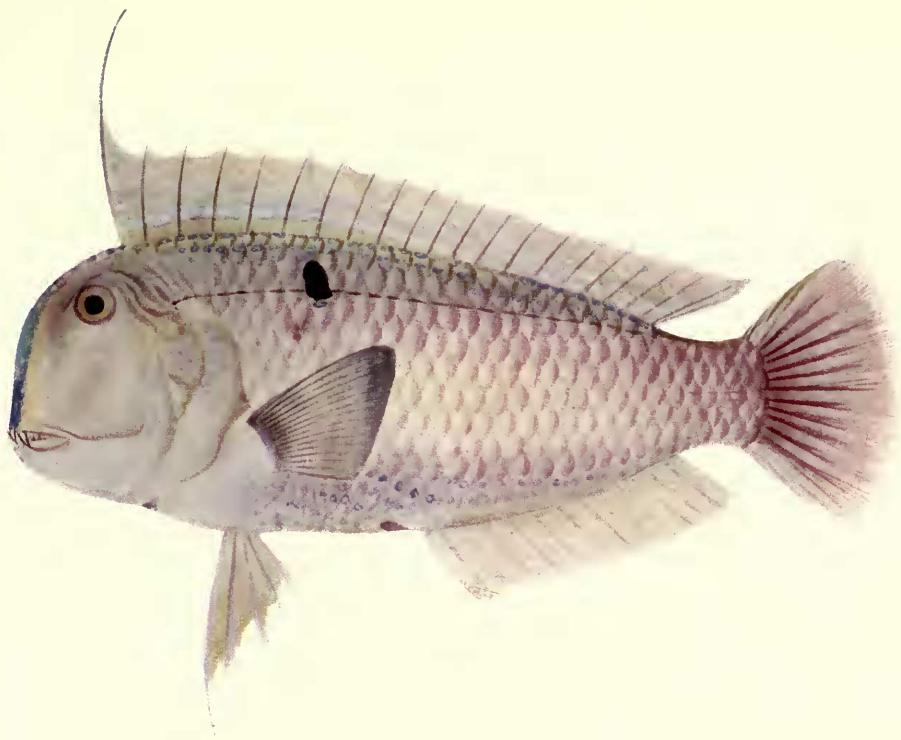


帶紅

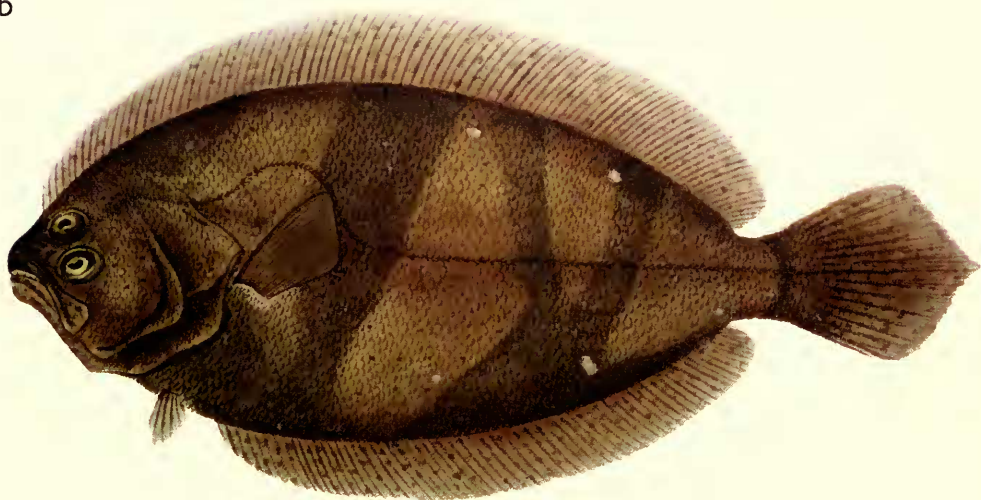
PLATE 9

- a. *Xyrichthys puniceus* Rich. (Reeves No. 184), 196 mm. tot. l. (No. 268 in list).
- b. *Platessa balteata* Rich. (Reeves No. 205), 194 mm. tot. l. (No. 305 in list).

a



b

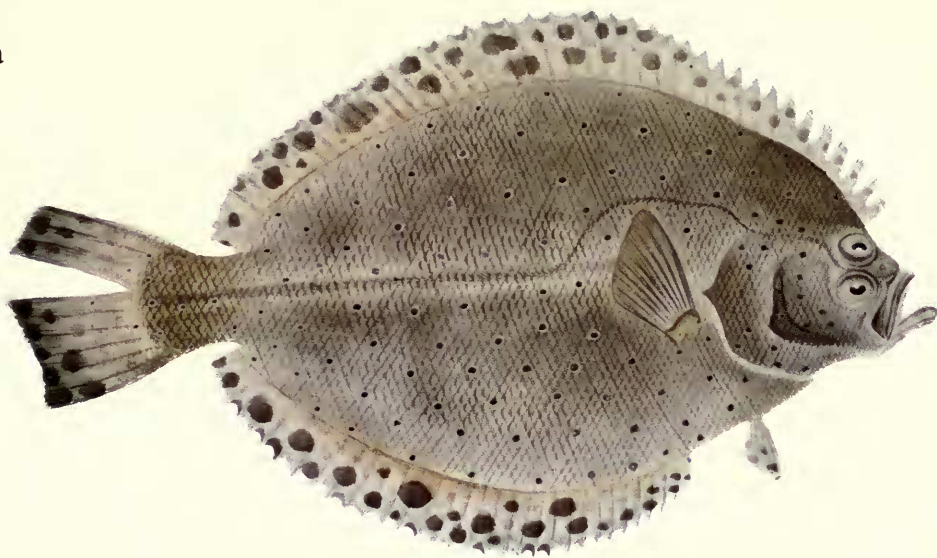


蓬破

PLATE 10

- a. *Platessa chinensis* var. *caeruleo-oculea* Rich. (Reeves No. 204), 278 mm. tot. l. (No. 307 in list).
- b. *Solea ovalis* Rich. (Reeves No. 179), 205 mm. tot. l. (No. 313 in list).

a



b

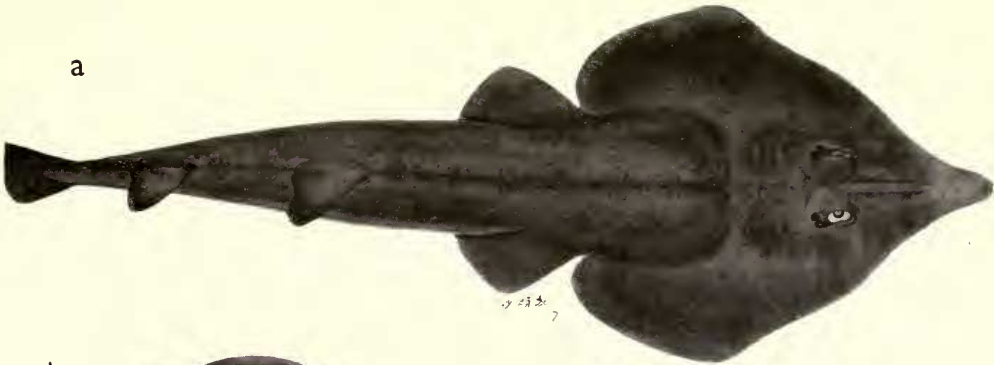


仔葉拈 魚板跳

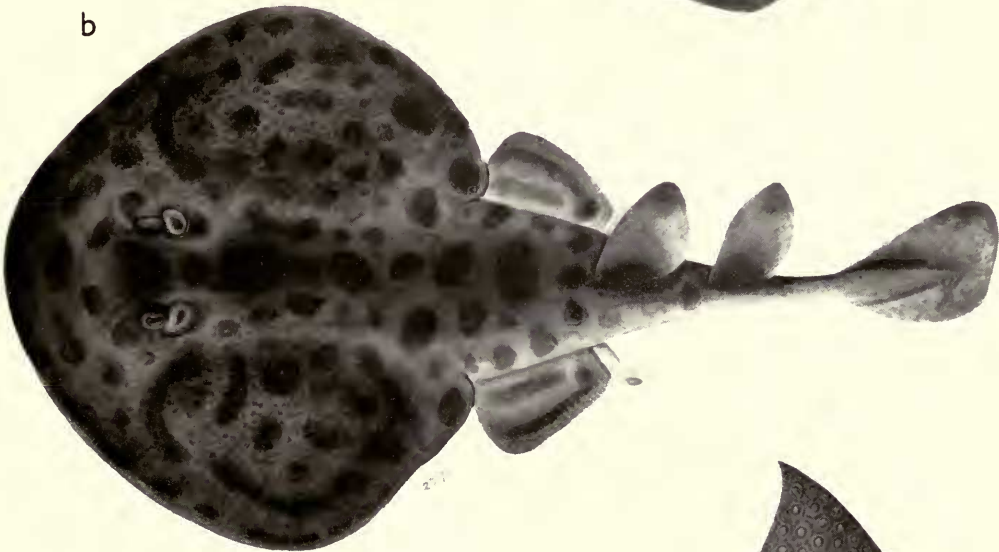
PLATE 11

- a. *Rhinobatus hynnicephalus* Rich. (Reeves No. $\alpha 7$), 492 + mm. tot. l. (No. 9 in list).
- b. *Narcine lingula* Rich. (Reeves No. 227), 328 mm. tot. l. (No. 11 in list).
- c. *Myliobatis oculus* Rich. (Reeves No. 281), *ca* 590 mm. tot. l. (No. 20 in list).

a



b



蒲 杓 木

c

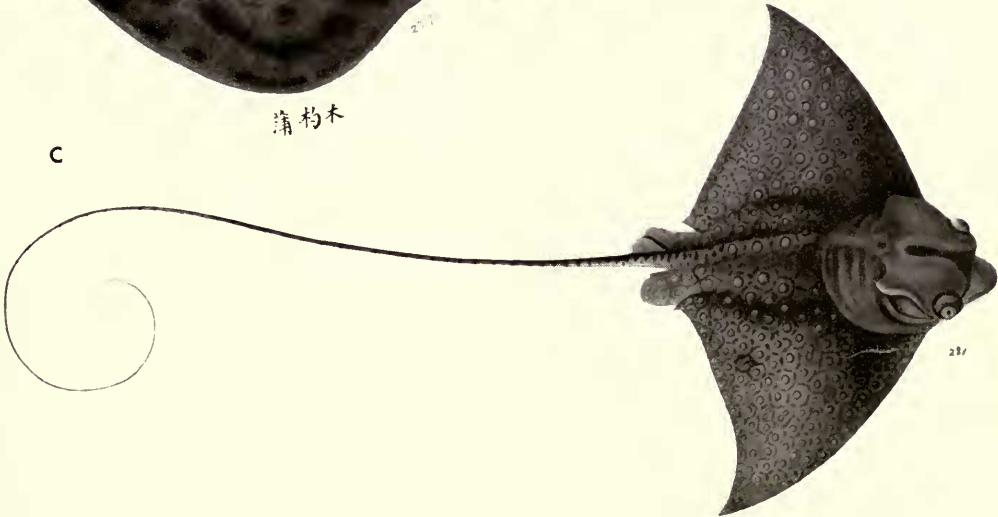


PLATE 12

- a. *Congrus fasciatus* Rich. (Reeves No. 284), 577 mm. tot. l. (No. 32 in list).
- b. *Saurus argyrophanes* Rich. (Reeves No. $\beta 15$), 255 mm. tot. l. (No. 49 in list).
- c. *Abramis terminalis* Rich. (Reeves No. 80), 229 mm. tot. l. (No. 54 in list).

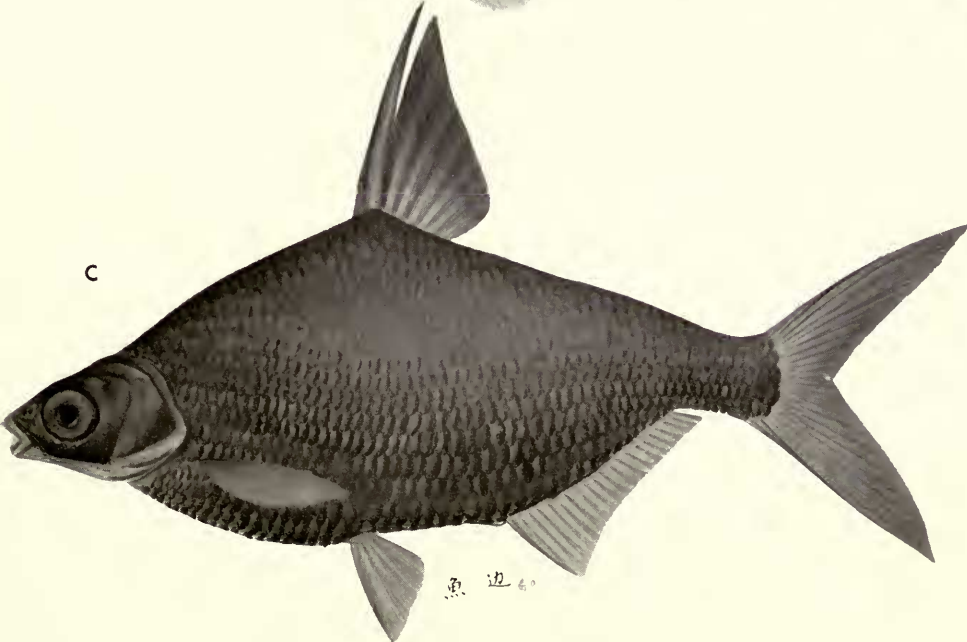


PLATE 13

- a. *Cyprinus abbreviatus* Rich. (Reeves No. 124), 204 mm. tot. l. (No. 56 in list).
- b. *Cyprinus acuminatus* Rich. (Reeves No. 125), 250 mm. tot. l. (No. 57 in list).

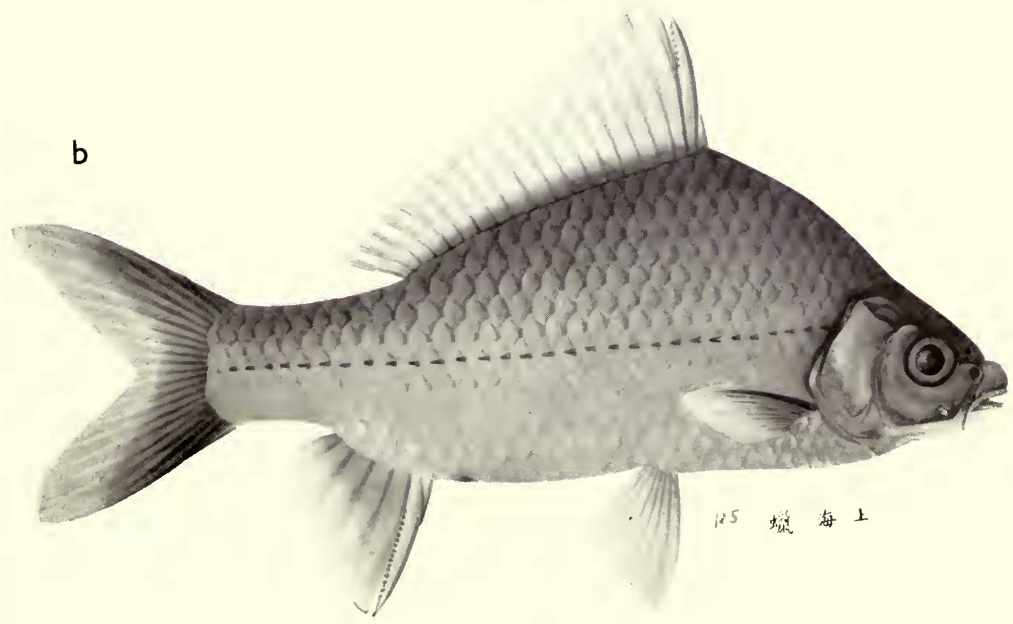
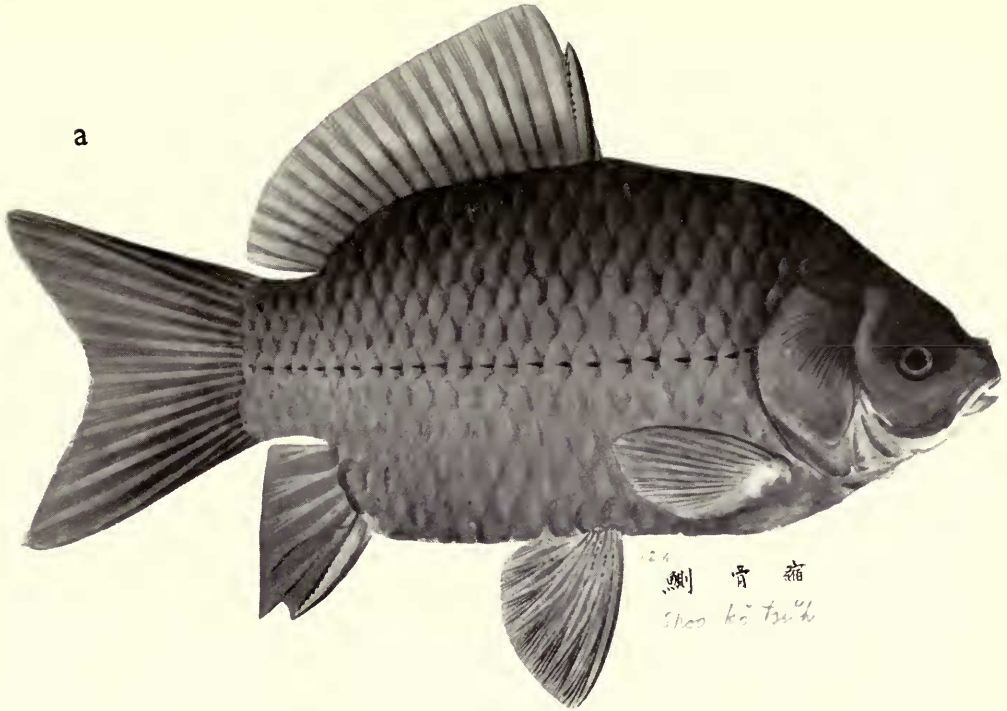
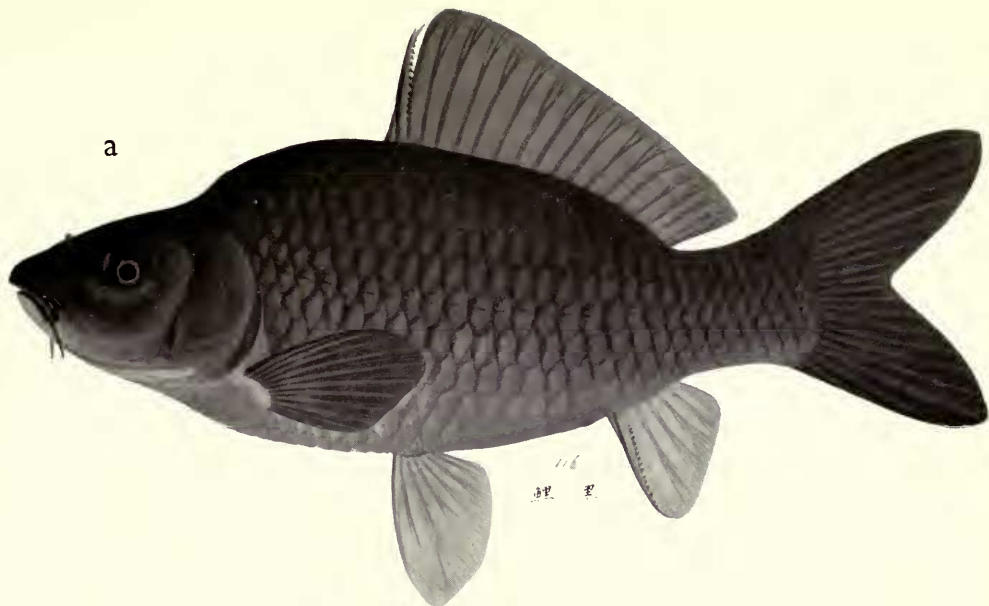


PLATE 14

- a. *Cyprinus atro-virens* Rich. (Reeves No. 116), 293 mm. tot. l. (No. 58 in list).
- b. *Cyprinus carassoides* Rich. (Reeves No. 126), 243 mm. tot. l. (No. 60 in list).

a



b

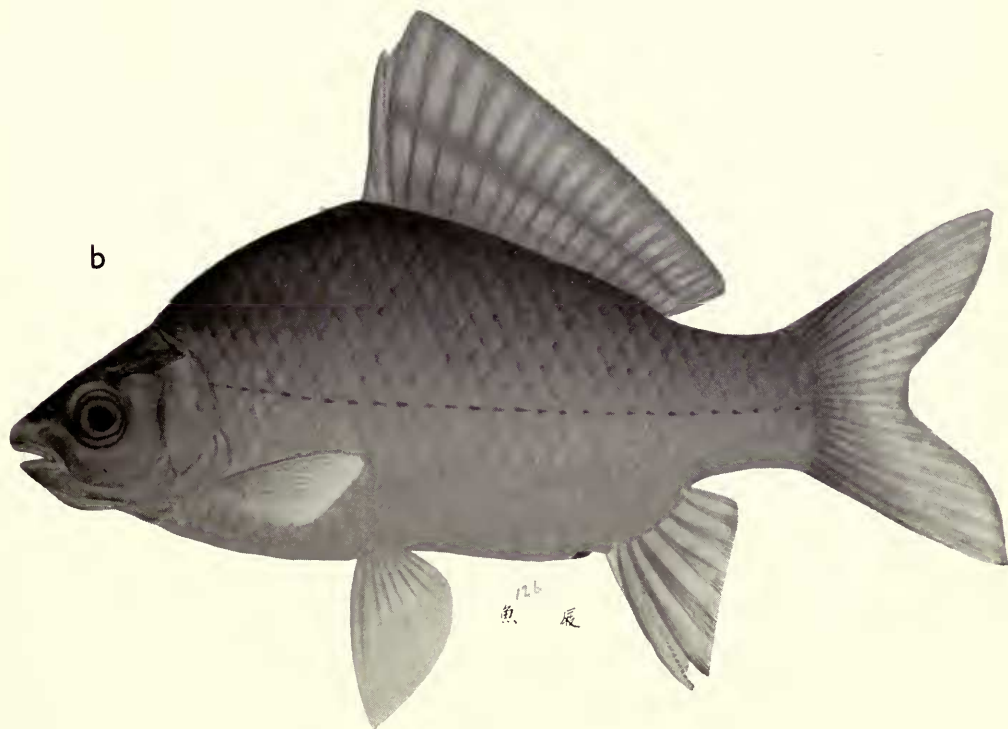


PLATE 15

- a. *Cyprinus flammans* Rich. (Reeves No. 118), 264 mm. tot. l. (No. 61 in list).
- b. *Cyprinus fossicola* Rich. (Reeves No. 240), 205 mm. tot. l. (No. 62 in list).

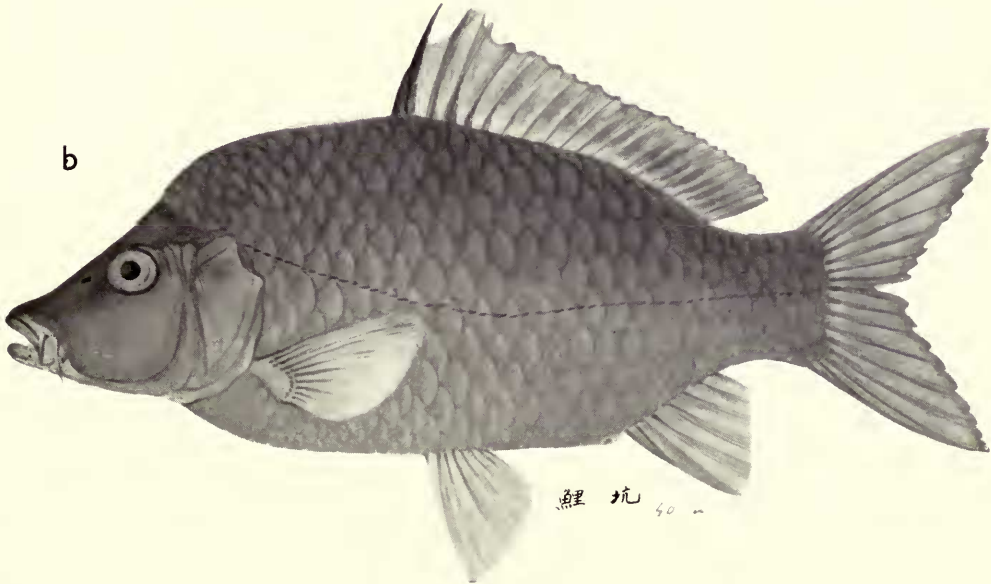
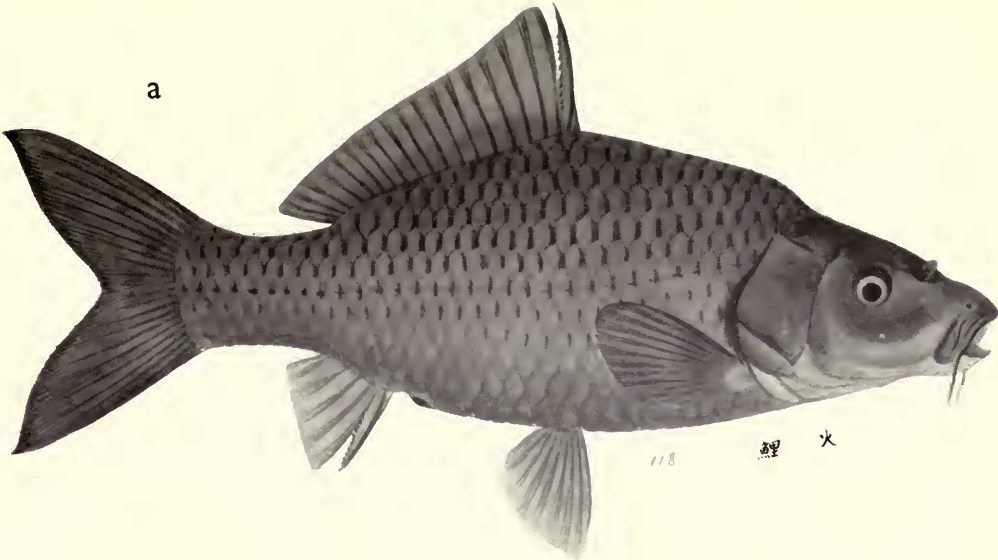


PLATE 16

- a. *Cyprinus hybiscoides* Rich. (Reeves No. 156), 327 mm. tot. l. (No. 64 in list).
- b. *Cyprinus sculpeonatus* Rich. (Reeves No. 120), 229 mm. tot. l. (No. 67 in list).

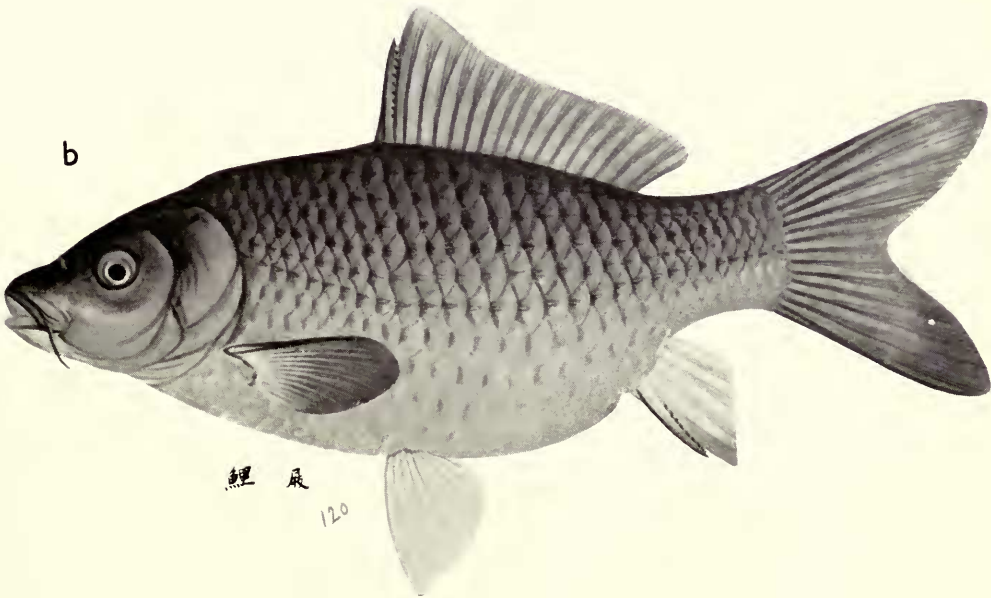
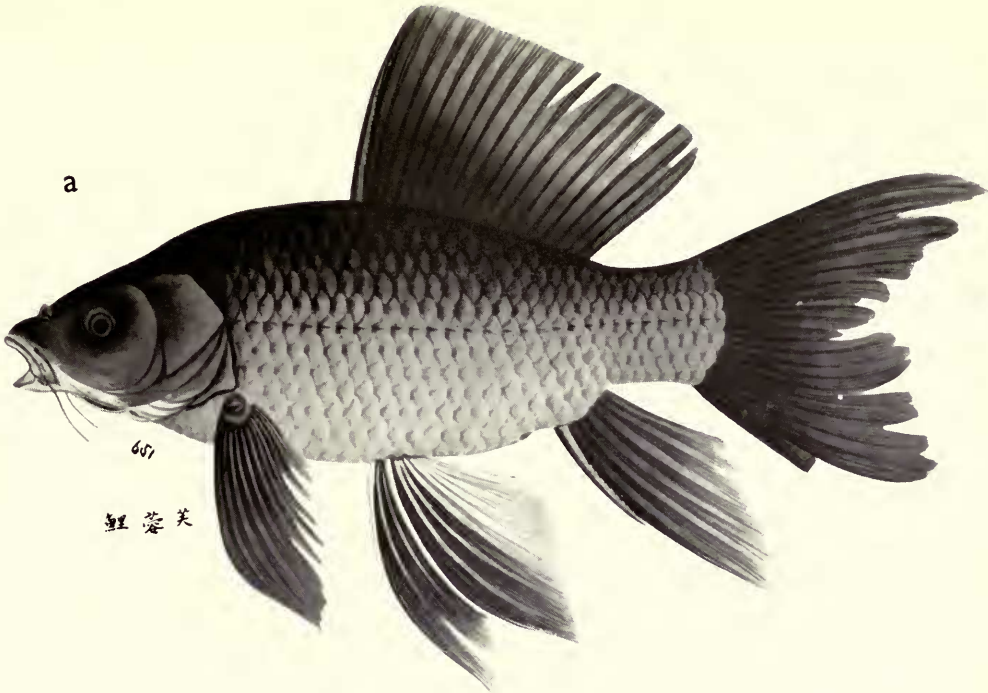


PLATE 17

- a. *Leuciscus recurviceps* Rich. (Reeves No. 149), 398 mm. tot. l. (No. 72 in list).
- b. *Leuciscus hemistictus* Rich. (Reeves No. 133), 378 mm. tot. l. (No. 73 in list).
- c. *Leuciscus homospilotus* Rich. (Reeves No. 220), 258 mm. tot. l. (No. 74 mm. in list).

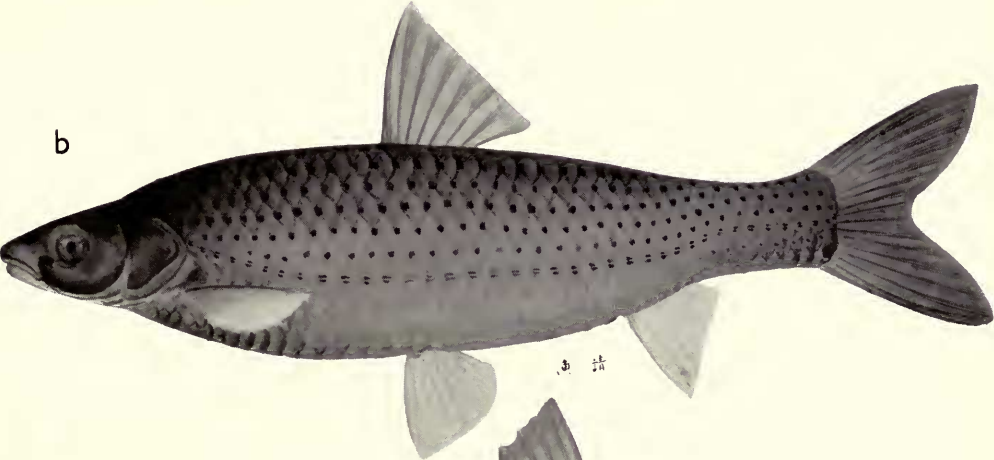
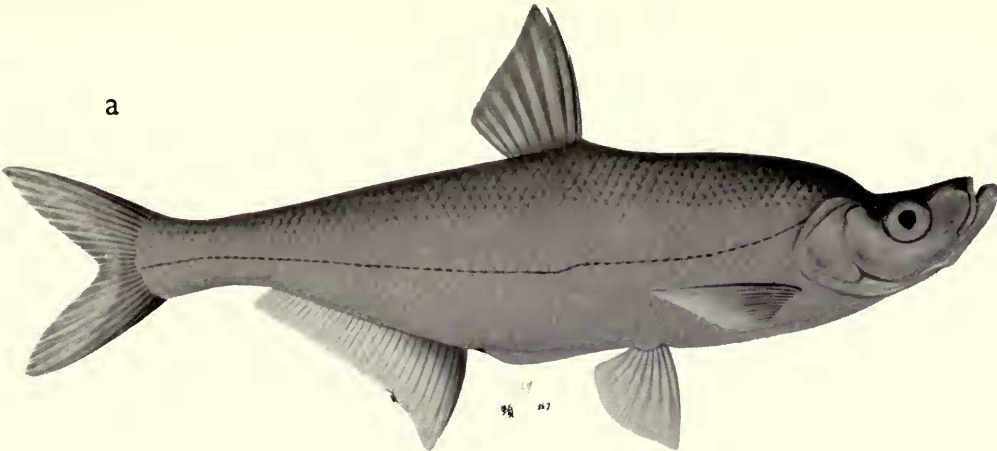
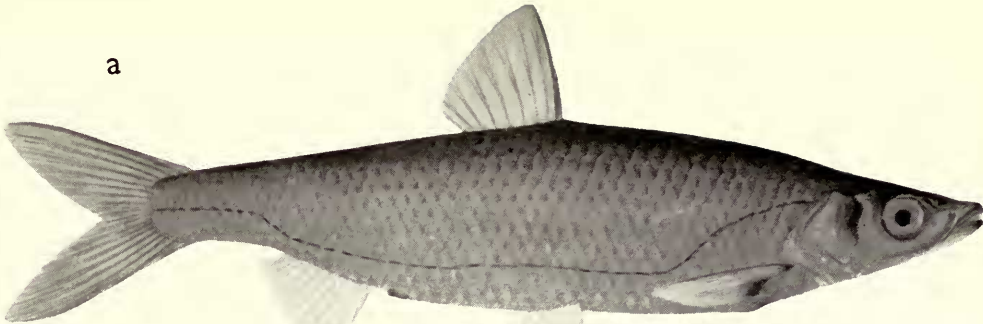


PLATE 18

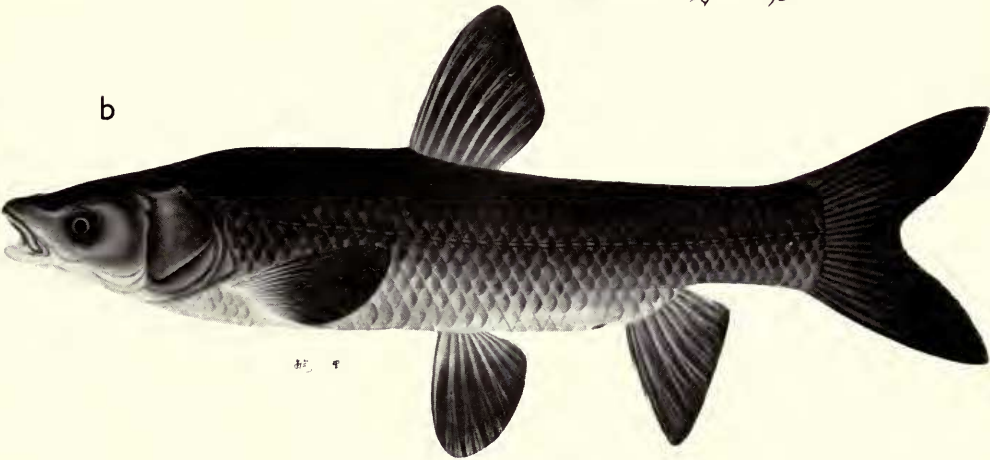
- a. *Leuciscus machaeroides* Rich. (Reeves No. 111), 183 mm. tot. l. (No. 76 in list).
- b. *Leuciscus piceus* Rich. (Reeves No. 153), 397 mm. tot. l. (No. 80 in list).
- c. *Leuciscus xanthurus* Rich. (Reeves No. 112), 287 mm. tot. l. (No. 81 in list).

a



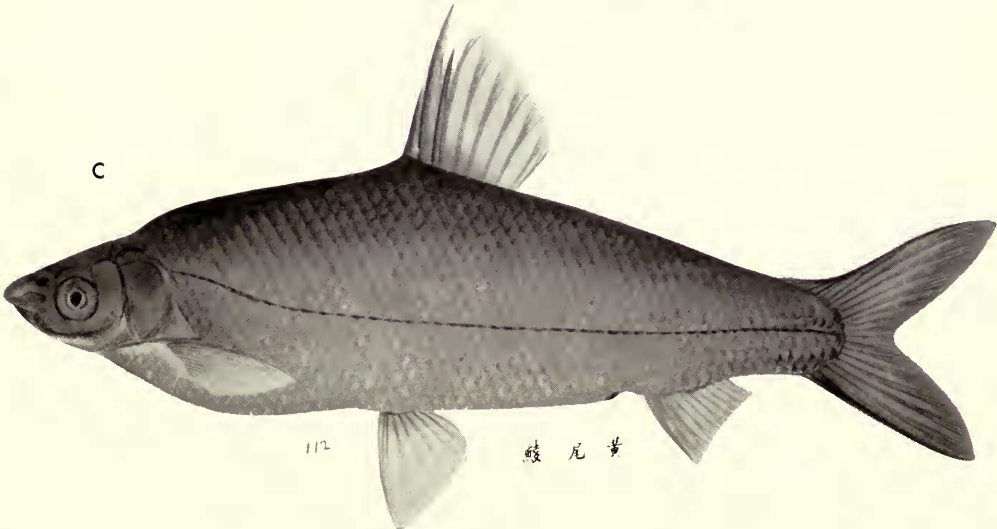
刀 鏡

b



鯉 魚

c



112

鯉 魚

PLATE 19

- a. *Cobitis psammismus* Rich. (Reeves No. 145), 181 mm. tot. l. (No. 83 in list).
- b. *Bagrus (Pimelodus?) boudierus* Rich. (Reeves No. 203), 413 mm. tot. l. (No. 85 in list).
- c. *Bagrus crinalis* Rich. (Reeves No. 217), 256 mm. tot. l. (No. 91 in list).

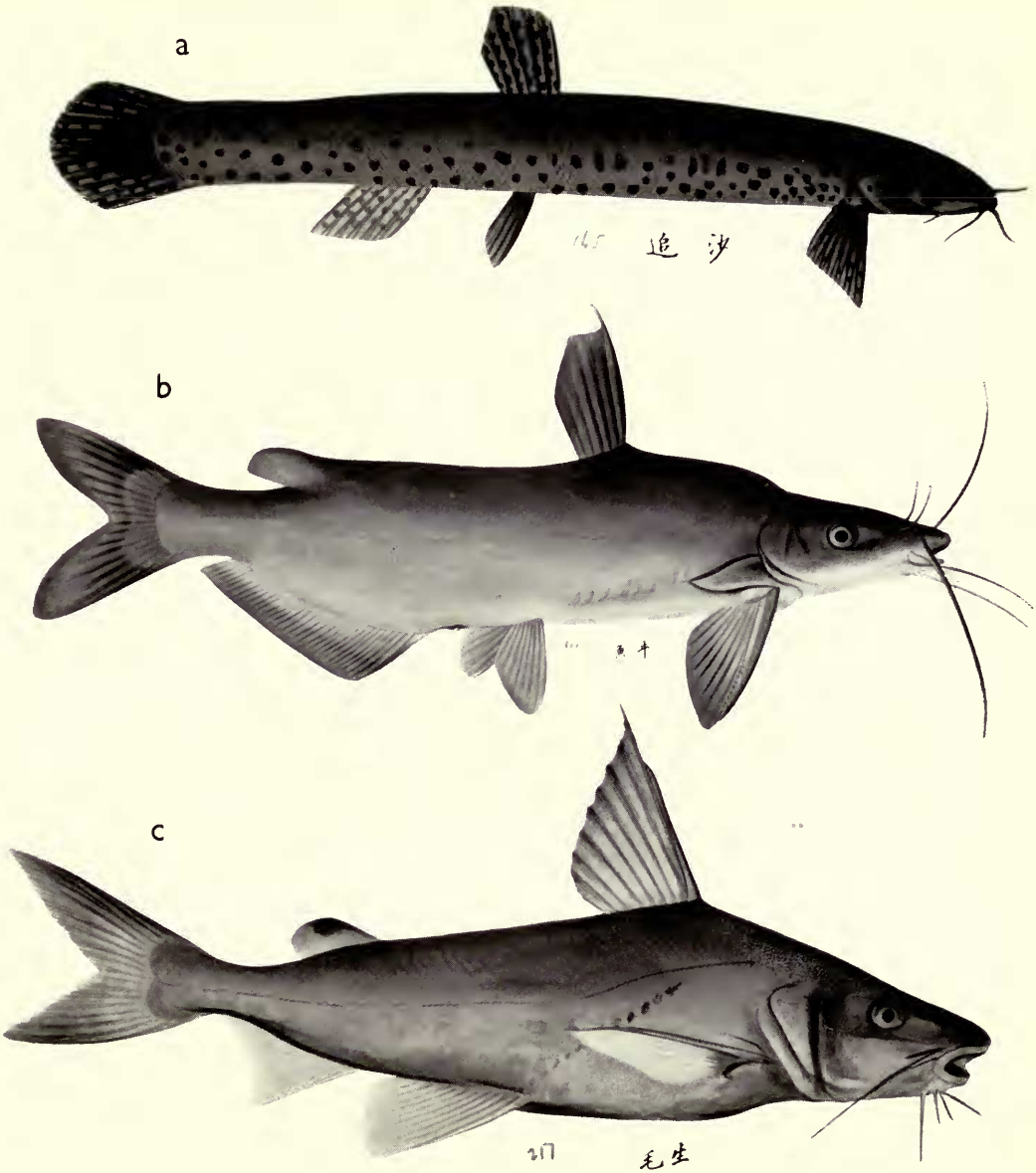
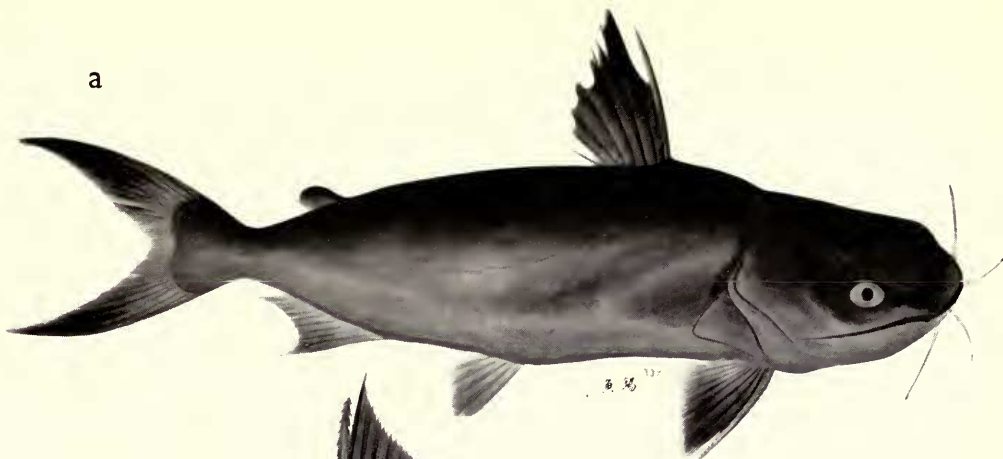


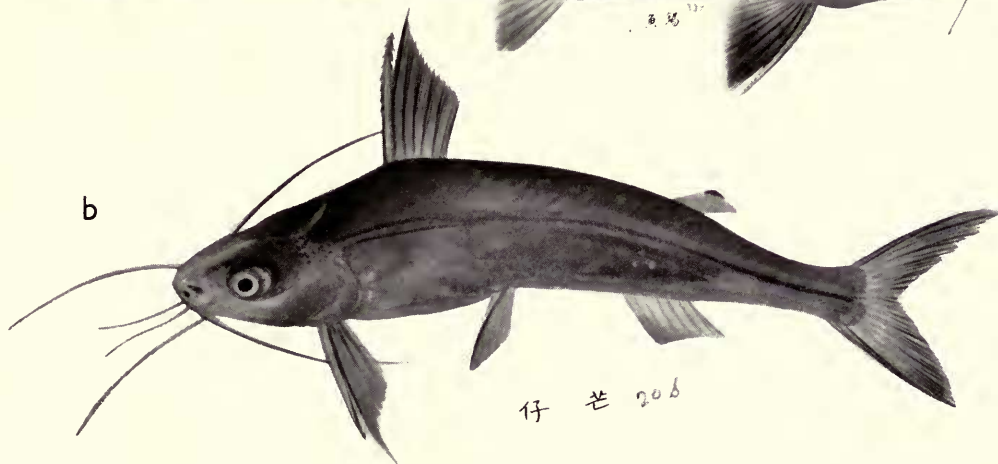
PLATE 20

- a. *Galeichthys stanneus* Rich. (Reeves No. 238), 381 mm. tot. l. (No. 92 in list).
- b. *Pimelodus mong* Rich. (Reeves No. β 20), 141 mm. tot. l. (No. 93 in list).
- c. *Ophicephalus puticola* Rich. (Reeves No. 142), 234 mm. tot. l. (No. 105 in list).
- d. *Monopterus helvolus* Rich. (Reeves, p. 124 s; Hardwicke No. 312), 226 mm. tot. l. (No. 106 in list).

a

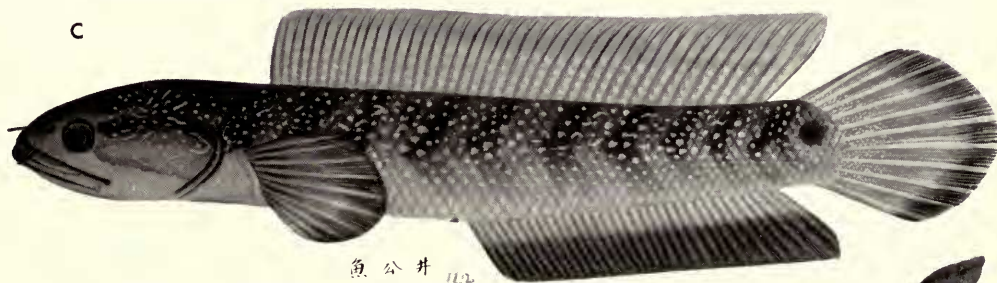


b



仔芒 206

c



魚公井 102

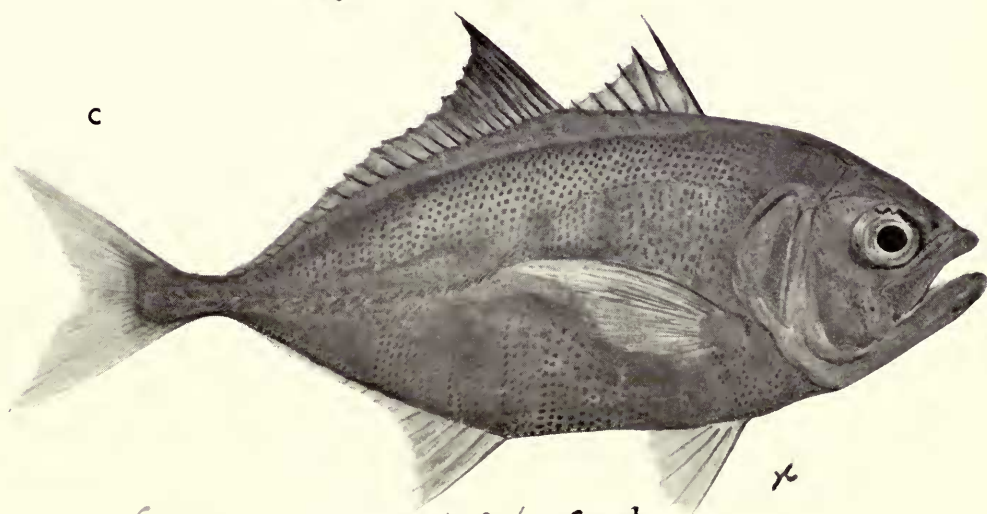
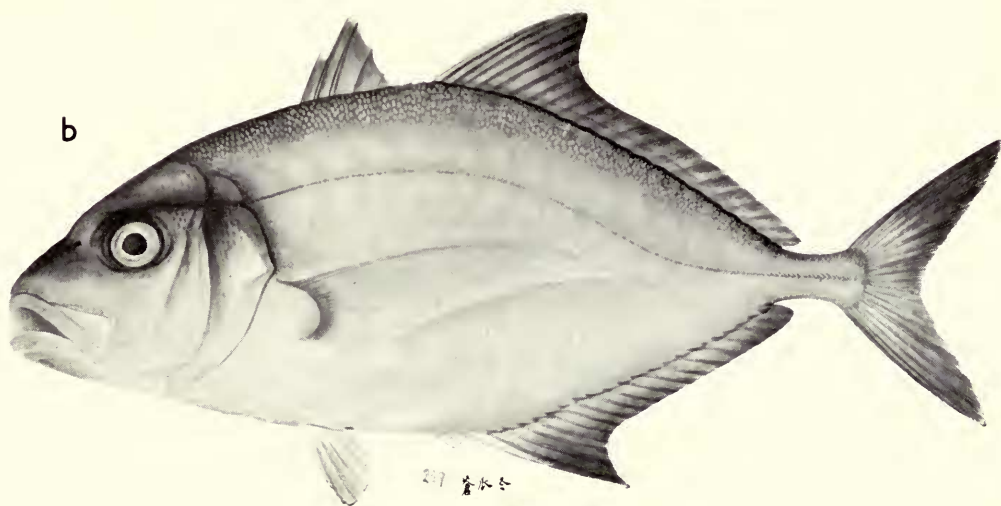
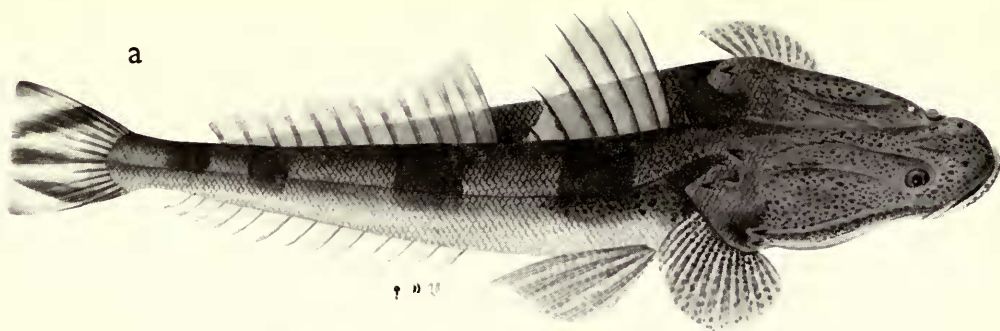
d



蛇黃 5

PLATE 21

- a. *Platycephalus cultellatus* Rich. (Reeves No. β 28), 408 mm. tot. l. (No. 119 in list).
- b. *Caranx chrysophrys* var. *hyemalis* Rich. (Reeves No. 239), 365 mm. tot. l. (No. 153 in list).
- c. *Caranx margarita* Rich. (Reeves, no number; Hardwicke No. 205), 112 mm. tot. l. (No. 157 in list).



Caranx margarita 276 腸黃

PLATE 22

- a. *Chorinemus delicatulus* Rich. (Reeves No. i 92), 156 mm. tot. l. (No. 161 in list).
- b. *Chorinemus leucophthalmus* Rich. (Reeves No. 219), 410 mm. tot. l. (No. 162 in list).
- c. *Corvina albiflora* Rich. (Reeves No. β 48), 302 mm. tot. l. (No. 179 in list).



PLATE 23

- a. *Pristipoma gallinaceum* Rich. (Reeves No. β 22), 224 mm. tot. l. (No. 221 in list).
- b. *Hoplegnathus maculosus* Rich. (Reeves No. 270), 293 mm. tot. l. (No. 237 in list).

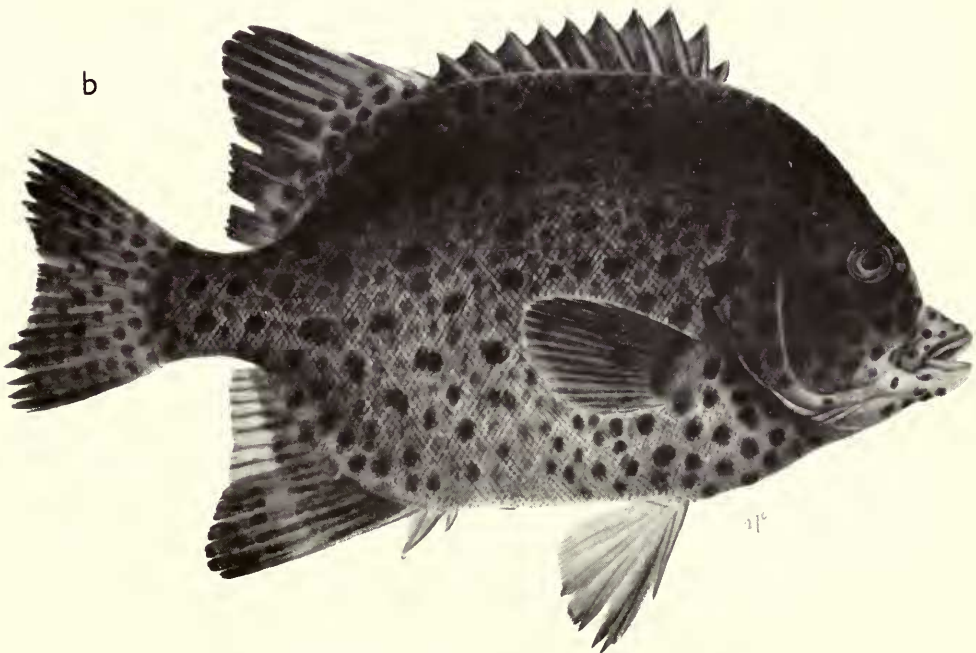
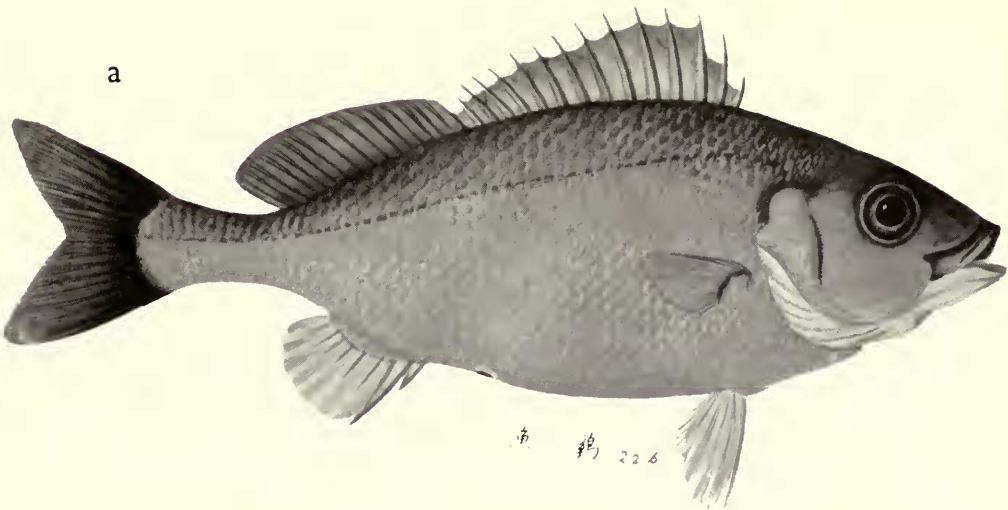
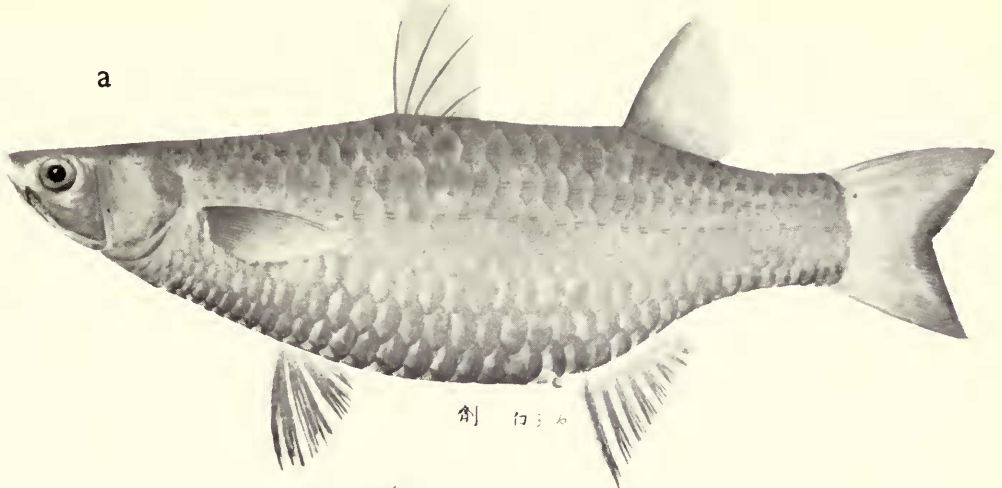


PLATE 24

- a. *Mugil ventricosus* Rich. (Reeves No. $\beta 31$), 267 mm. tot. l. (No. 250 in list).
- b. *Mugil* (vel *Cestraeus*) *xanthurus* Rich. (Reeves No. 127), 286 mm. tot. l. (No. 251 in list).
- c. *Julis exornatus* var. α Rich. (Reeves No. 258), 169 mm. tot. l. (No. 262 in list).

a



刺 白 鱗

b



刺 尾 鱗

c



252

魚 哥 鶯

PLATE 25

- a. *Julis exornatus* var. β Rich. (Reeves No. 86), 157 mm. tot. l. (No. 263 in list).
- b. *Julis thyrsites* Rich. (Reeves No. 208), 169 mm. tot. l. (No. 266 in list).
- c. *Blennius fasciolaticeps* Rich. (Reeves, no number, p. 124q), 72 mm. tot. l. (No. 275 in list).



PLATE 26

- a. *Boleophthalmus campylostomus* Rich. (Reeves No. $\beta 52$), 95 mm. tot. l. (No. 280 in list).
- b. *Eleotris cantherius* Rich. (Reeves No. 114), 221 mm. tot. l. (No. 281 in list).
- c. *Hippoglossus goniographicus* Rich. (Reeves No. 254), 216 mm. tot. l. (No. 303 in list).

a

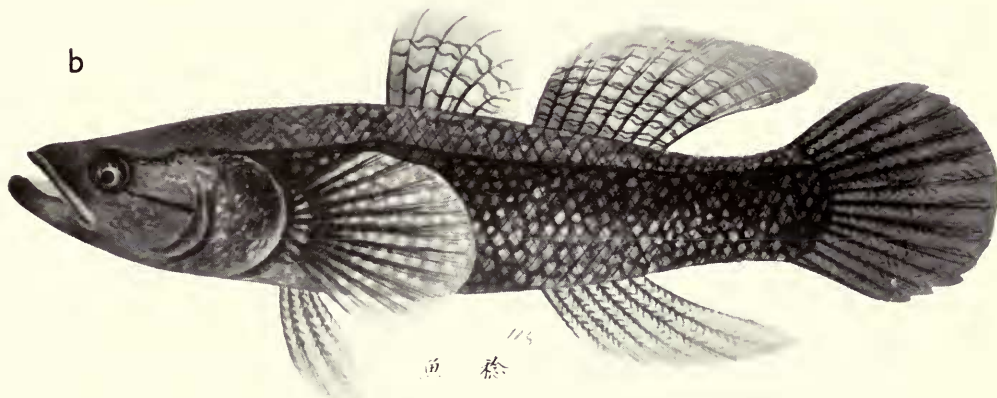


狗口臂

52

6

b



白 鯰

115

c



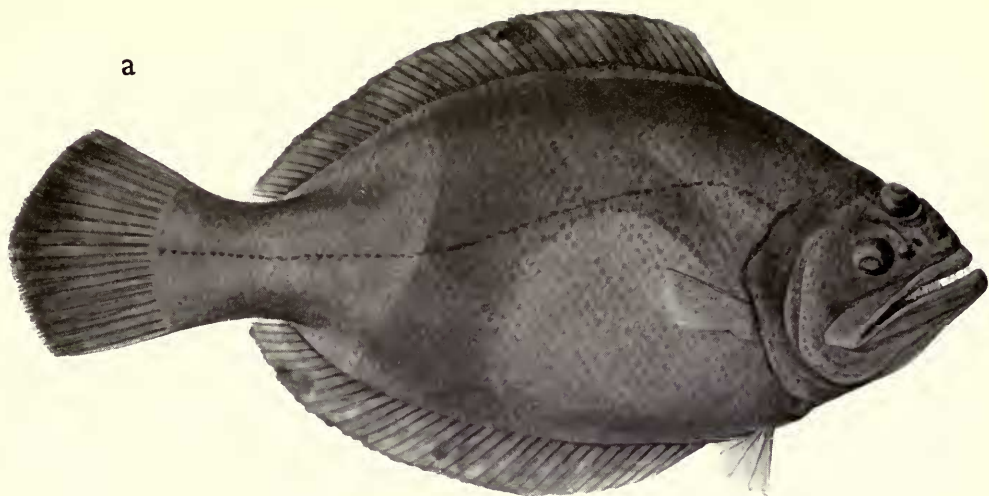
254

葉 枯 花

PLATE 27

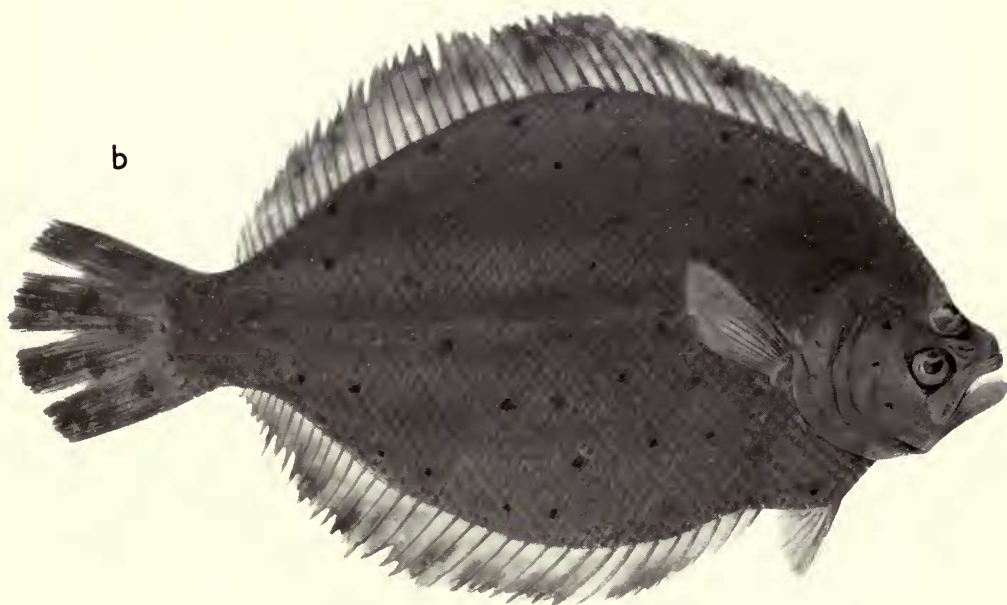
- a. *Hippoglossus orthorhynchus* Rich. (Reeves No. 106), 172 mm. tot. l. (No. 304 in list).
- b. *Platessa velafracta* Rich. (Reeves No. 105), 191 mm. tot. l. (No. 309 in list).

a



臭正

b

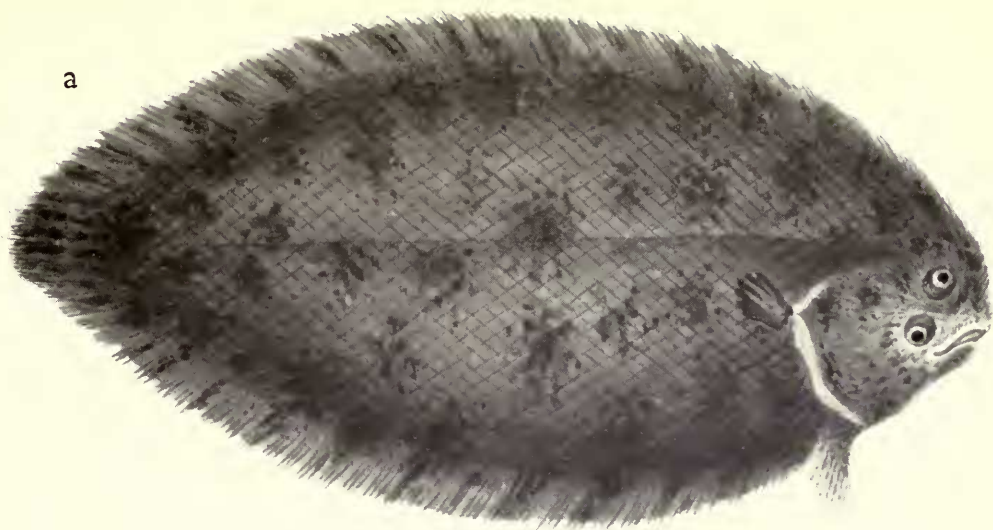


蓮破花 105

PLATE 28

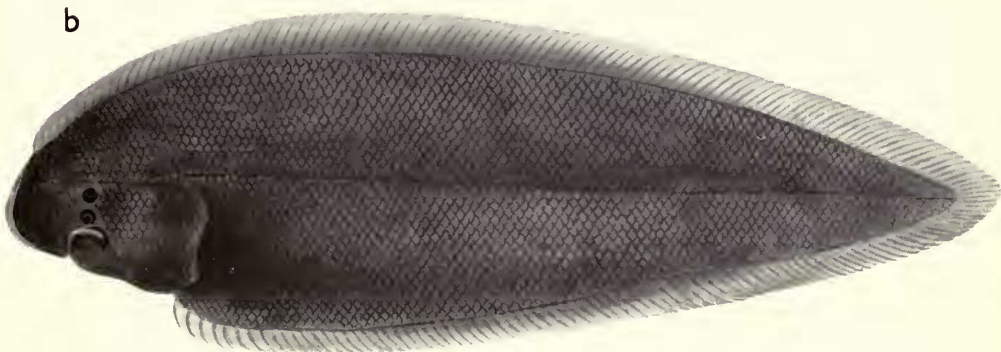
- a. *Solea foliacea* Rich. (Reeves No. $\beta 5$), 122 mm. tot. l. (No. 311 in list).
- b. *Plagiusa auro-limbata* Rich. (Reeves No. 151), 266 mm. tot. l. (No. 315 in list).
- c. *Plagiusa favosquamis* Rich. (Reeves No. $\beta 50$), 235 mm. tot. l. (No. 316 in list).

a



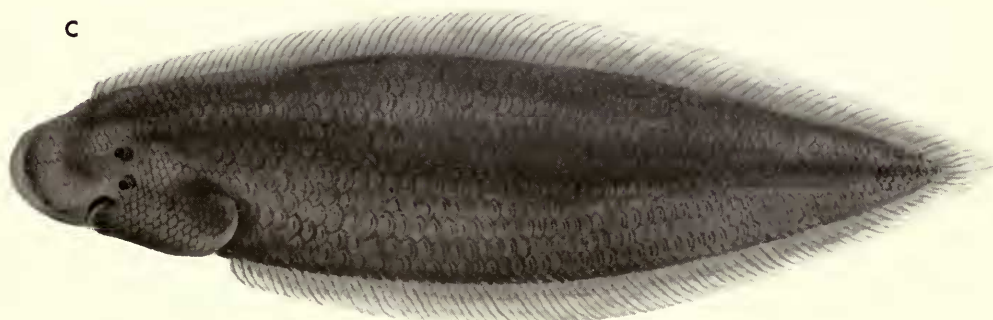
仔葉粘 5 6

b



沙 鱧 边金

c



沙 鱧 鳞 密 506

PLATE 29

- a. *Plagiusa melampetala* Rich. (Reeves No. 150), 345 mm. tot. l. (No. 317 in list).
- b. *Plagiusa nigro-labeculata* Rich. (Reeves No. 152), 268 mm. tot. l. (No. 318 in list).
- c. *Plagiusa puncticeps* Rich. (Reeves No. 95 m), 108 mm. tot. l. (No. 319 in list).

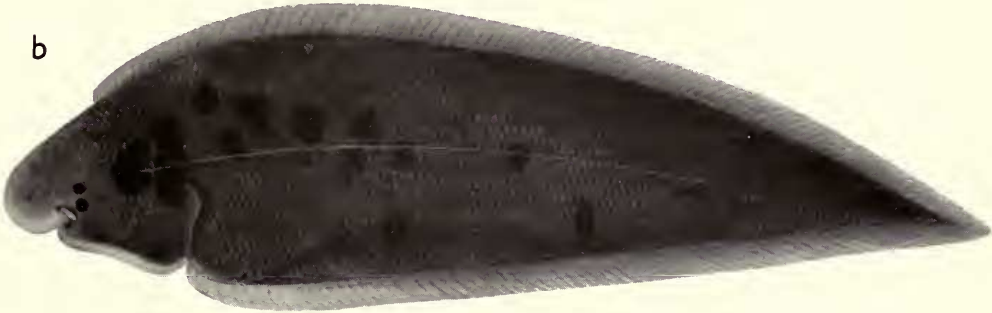


a



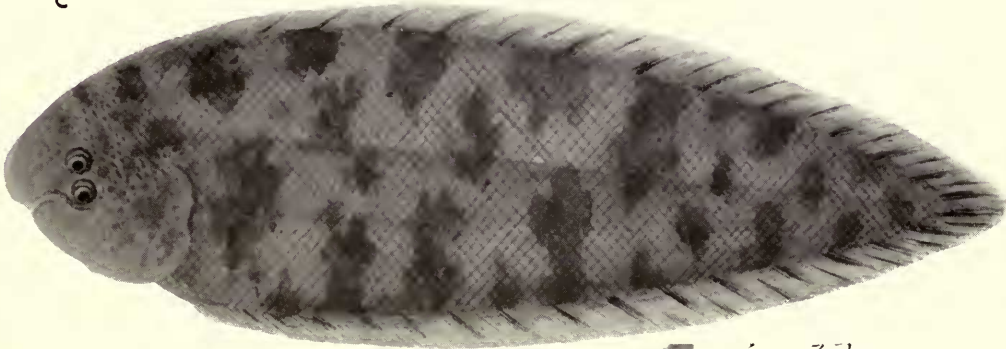
沙 梭 鱈 魚

b



沙 梭 子 魚

c



m

95 白 鰈